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GENERAL VIEW

OF THE

AGRICULTURE

OF THE EAST RIDING OF

YORKSHIRE

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GENERAL VIEW

OF THE

AGRICULTURE

OF THE EAST RIDING OF

YORKSHIRE,

AND THE AINSTY OF THE CITY OF YORK,

WITH OBSERVATIONS ON THE MEANS OF ITS IMPROVE

BY ISAAC LEATHAM,
OF BARTON NEAR MALTON, YORKSHIRE.

G+ Br.+

DRAWN UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULTUR
INTERNAL IMPROVEMENT.

LONDON:
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THE following valuable communication, respecting the present state of Husbandry in the East Riding of Yorkshire, and the means of its improvement, drawn up for the consideration of the Board of Agriculture, is now printed, merely for the purpose of its being circulated there, in order that every person interested in the welfare of that county, may have it in his power, to examine it fully, before it is published. It is therefore requested, that any remark, or additional observation, which may occur to the reader, on the perusal of the following sheets, *may be written on the margin*, and transmitted to the Board of Agriculture, at its office in London, by whom the same shall be properly attended to; and when the returns are completed, an account will be drawn up, of the state of agriculture in the East Riding, from the information thus accumulated, which, it is believed, will be found greatly superior to any thing of the kind ever yet made public.

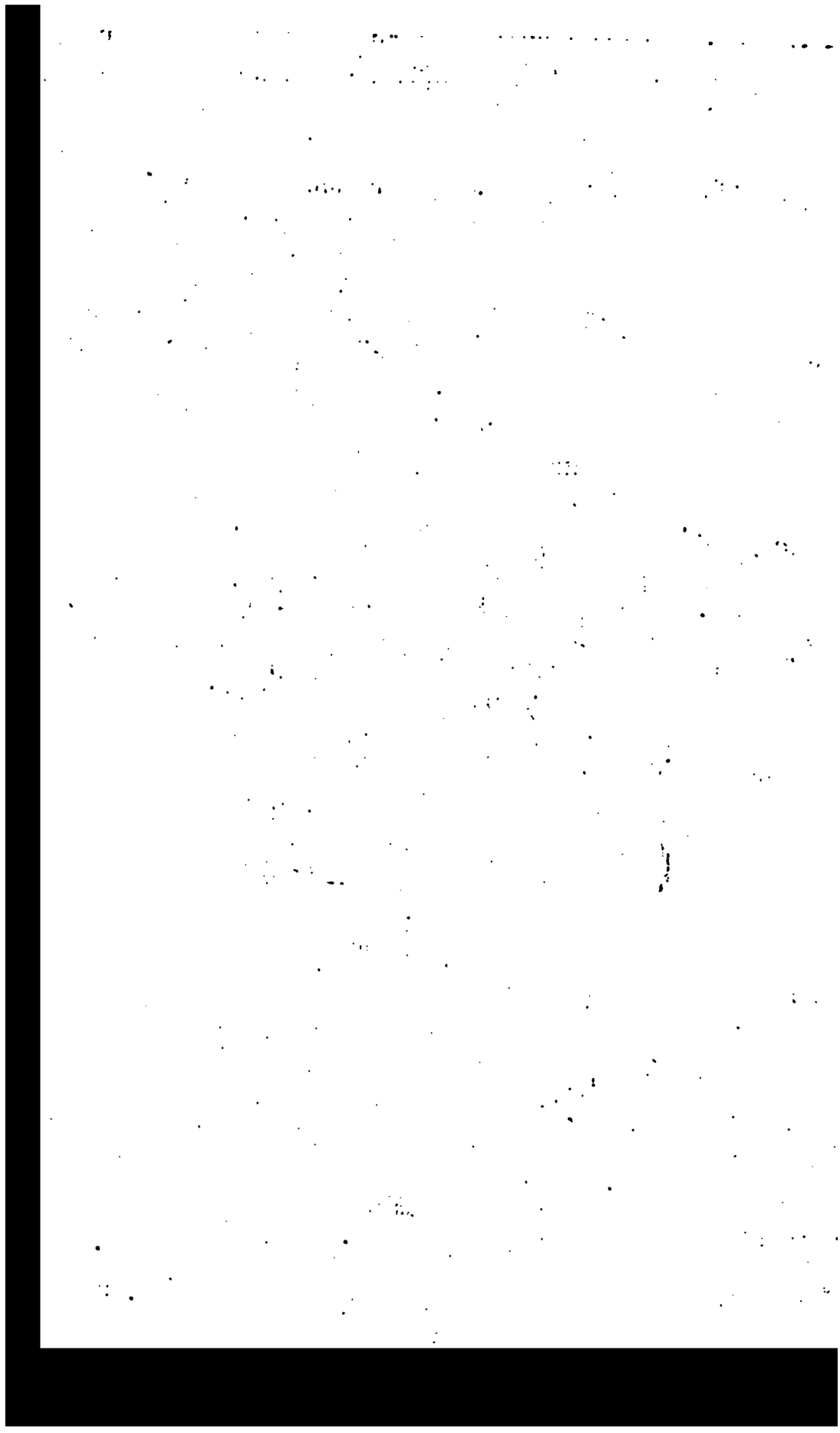
The Board has adopted the same plan, in regard to all the other counties in the united kingdom; and, it is hardly necessary to add, will be happy to give every assistance in its power, to any person, who may be desirous of improving his

TO THE READER.

IT is requested, that this Paper may be returned to the Boa of Agriculture, as soon as may be convenient.

It is hardly necessary to add, that the Board does not co sider itself responsible, for any fact or observation contained these Reports, which, at present, are printed and circulate for the purpose merely of procuring additional informatio and of enabling every one, to contribute his mite, to the im provement of his country.

February, 1794.



This Plan contains a very small number of Towns & Villages in the East Riding & Ainsty sufficient only to mark the Boundaries of each District.
THE NO
THE GERMAN OCEAN
THE WEST RIDING
LINCOLNSHI
Malton
Setrington
Flambrough
Bridlington
Kilham
Stalmire
Burton Agnes
Fraysthorpe
Lowthorp
Granmoor
Barmston
Lissit
Driffield
Kenythorpe
Leavening
Scrayingham
Stamford Bridge
Gate Helmsley
Bishop Wilton
Dunnington
Kexby Bridge
Wilberfoss
Pocklington
Nunburnholme
Bainton
North Frodingham
Hornsea
Leaven
Rise
Beverly
Hull River
Waughen
Burton Constable
Owstwick
Roos
Headon
Ollringham
Winestead
Pattrington
Welwick
Easington
Cherry Cob Sand
Sunk Is.
Kirkella
North Newbald
Market Weighton
East Cottingwith
Bubwith
Derwent Riv.
Elvington
Naburn
Wharfe Riv.
Cawood
Selby
Snaith
Trent River
Ouse River
Nidd R.
Moor Mokon
Long Marston
Thorp arch
Bushop Thorp
Tadcaster
Nor appleton
Ainsty of York
York
British Miles
5
10
20

INTRODUCTION.

THE East Riding of the County of York, comprehends the South East part of that county, and is situated between 53° 35′, and 54° 15′ north latitude, and between 2′ and 1° 2′ west longitude. It is bounded on the East by the German ocean; on the South by the rivers Humber and Ouse; on the West by the river Ouse; and on the North (a very small part excepted), by the river Derwent. Its length, on a medium, extends 40, and its breadth 32 miles; it contains 819,200 acres. All the rivers above mentioned are navigable, except some part of the Derwent. This Riding is nearly encompassed by a navigation, which, with those from Hull to Beverley and Driffield, and from another part of the Humber to Market Weighton, renders it a situation peculiarly advantageous for agriculture and commerce. The surplus produce of this District finds an easy conveyance by water to every port in the kingdom, and to all the great manufacturing parts of the West Riding of Yorkshire. It is proper here to observe, that in this Description and View, the town and county of Kingston upon Hull,* are included.

This Riding consists of almost every variety of soil, from a deep warp to a blowing sand; which I shall describe as minutely as the nature of this undertaking will allow;] the annexed plan will shew the extent of the divisions, which mark the material variations of the soil. That part adjoining the sea, extending about 50 miles from the Spurn-head to Filey, is much exposed to the easterly winds, and greatly annoyed by them; they blow from the sea in the spring, and are commonly of long duration;

* The term Hull, is commonly used for this town.

they check vegetation greatly, particularly the growth of the hedges. From the Spurn-head to Bridlington, an extent of thirty-eight miles, the shore is generally low, and the influence of these winds is not so much felt as on the coast from Bridlington to Filey; the shore for 15 miles round Flamborough-head is high, and behind it lies the wold part of this district, called the Yorkshire Wolds, marked light-green in the plan, extending westward from near Filey by Willerby, Sherburn, West Heslerton, and Setterington to near Malton, from thence southward by Minithorpe, Leavening, Bishop Wilton, Pocklington, Market Weighton, to South Cave; then eastward by Ferriby to Kirk Ella, northward to Beverley, north-westward to Bainton, north-eastward by Driffield and near Kilham to Bridlington, on an average 13 miles in breadth, and 37 miles in length, containing 307,840 acres, full as much elevated as this shore or cliff, and of course an exposed situation. The approach to this district on every side is by an ascent up a considerable hill or brow, except on the east side, where it is more gentle. The surface of these Wolds is generally divided into easy extensive swells and plains, with many intervening deep dales or valleys. The soil is commonly a free and rather light loam, with a mixture of a chalky gravel; some parts are very shallow; it also contains a deeper and more kindly loam, and a more light sandy mixture upon a chalk rock. The situation of the Wolds considered, nature has not been sparing in that useful article, water; in most parts springs are to be found, though some are at a considerable depth; and few, if any townships are now without their wells; the uneven form of the surface also promotes the filling of the circular ponds with almost every shower; these ponds are now in general use. Near and upon the skirts of the hills many springs break out, and form very fine rills or streams; there are also some instances of this in the higher parts; particularly near Wold Newton, where we find one very curious. We perceive it generally towards the spring of the year, trickling through the grass where the ground is not broke, to such a degree as to constitute a stream so considerable, as

metimes to fill a drain twelve feet wide at the top, six at
tom, and three feet deep; in which it is carried to the sea,
s for two or three months, then totally ceases, and scarcely
mark of the place from whence it issued: few countries
re of this description are better watered.

ough the fertile plain may boast of its mild air, meandering
and luxuriant produce, yet it is not of greater importance
is district, and must even yield to it, on account of the
us flocks these pastures support. I need not here set
e estimation and consequence of this land to the nation,
say that the soil is perfectly congenial to that nice feeding
st useful animal the sheep, and that the ground is never
d with the rot.

what other purpose this land has been misapplied, and
by the ignorant and the avaricious I shall set forth in the
ng remarks.

evident that the soil and climate of the Wolds are not
ly adapted to the growth of wood, and very little is to be
here, some few places excepted. Many attempts have
udably made to raise the hardier sorts, and with better
than could have been expected. Time will discover how
cceed at a later stage of their maturity; be that as it may,
a moderate growth is and will be found very useful, in
f shelter as well as ornament.

part of the Riding situated north of the Wolds, and ex-
along the rivers Hertford and Derwent, from Filey to
, marked blue in the plan, is a narrow strip at the foot
Wolds; a considerable part of it is a light sand, with varia-
f gravelly loam, strong loam, free loam, and clay loam:
ation of a large part of this division is flat, its soil is also
with a springy bottom, and flooded in general by the
mentioned rivers: a drainage could be executed in few
places at a more moderate expence, or where it would be
with a better effect. It is therefore astonishing to be-
r eight thousand acres of land in this condition, the im-

provement of which would pay at least twenty per cent. per ann. render the air more wholesome, and beautify the country.

There is but little wood in this division, except in the hedge rows of the best land, in some patches and ornamental plantations. It is well watered; most of the town-ships having each a rill or small stream, which issues out of the foot of the Wold hills, and empties itself into the river Derwent or Hertford. That part extending between the foot of the Wolds and the river Derwent to near Kexby Bridge, is diversified with hill and dale, and many intervening plains. The variations of soil consist of every sort of loam, some of the very light loams have a springy bottom, and some of them have a substratum of stone; part of which on the east near Malton is good lime-stone. It is here only, the chalk of the Wolds excepted, where we find materials for lime: this division is as well watered as the last, from the many springs issuing out of the Wold hills.

The country adjoining the last district, and extending between the river Ouse and the foot of the Wold hills, and on each side of the river Derwent to Bubwith, marked pink in the plan, is flat, but with a few gentle swells; the soil contains every kind of loam, a very considerable part consists of a light sandy loam, with an open springy bottom. The drainage here is very indifferent, few of the drains are of a sufficient depth to reach the springs, by the water of which a large part of this division is starved, and rendered less productive: a considerable part is well wooded (chiefly with oak), particularly about Escrick; this wood demands a better drainage and more attention, not only on account of its growth, but because the drains and ditches are much choaked up and injured by the leaves of the trees. There is no want of water in this division, in many places it lies too near the surface.

The country adjoining the last division, marked grass green in the plan, and extending between the foot of the Wolds and the Ouse and Humber to Hull, is also flat; the soil consists of a stout clay, a free and sandy loam, a small part of which is lighter

than the rest, and has a springy bottom: along the side of the Ouse and Humber we find a considerable quantity of warp land; the drains and ditches here are also inadequate and inefficient; there is a tolerable sprinkling of wood, but mostly in the hedge rows, and in some ornamental patches.

The country extending from Hull to within a small distance of Spurn-head, marked orange in the plan, along the side of the Humber, and nearly adjoining the Patterington road, is flat (in this I include Sunk Island), the soil is mostly warp, generally strong, but some parts contain a greater or less mixture of sand. There is very little wood in this division, and not many springs, and the water is sometimes scarce in dry seasons, and as it is stagnant and rather brackish, it is not very wholesome.

The country from the last division extending eastward between the sea and the foot of the Wolds, on each side of the river Hull, marked lilack in the plan, is generally flat, but with many gentle swells; the soil consists of gravel, hazle earth, strong loam and clay, some parts coarse and thin, with an open bottom. Although considerable attention has been paid to drain this division, much remains still to be done: here are some extensive woods, many small patches, and a large quantity of trees in the hedge rows.

The last mentioned division, with so much of this as lies east of the river Hull is that part of the country called Holdernesse; the market towns are Hull, Beverley, Driffield, Bridlington, Hunmanby, Patterington, Headon, Howden, Weighton, Pocklington, Kilham, Cave, and Harnsea; the western part has also a ready communication with Selby, York, and Malton; and eleven of those sixteen market-towns have the particular advantage of a navigation directly to or very near them.

The situation of Hull, on a river receiving navigable branches from the most flourishing and trading parts of this and several other counties, is particularly advantageous to trade, and renders this town both populous and opulent, and a market for a large share of the neighbouring produce, not only to support the inhabitants, but also for the victualling of ships. From hence

also considerable quantities of corn, butter, and bacon, are daily exported; those articles however are only exported in proportion to that part of the country, which is situated within a convenient distance, as the freight and carriage of such heavy goods, must always induce the vender to avail himself of the nearest market; consequently every navigation will have its share in proportion to the cultivation and surplus produce of the country which adjoins it: on this account other places also have their share of trade, and the country derives a convenience from their situation; thus Patterington accommodates the east, and Bridlington the north part of Holdernesse, with the west part of the Wolds; Driffield the west part of Holdernesse, and the south and east part of the Wolds and its vicinity; Malton the north and west part of the Wolds and its neighhourhood; the Derwent various places from Malton to its fall into the Ouse; York takes a considerable share of the produce from the west part of this riding; Market-Weighton navigation accommodates the south part of the Wolds, and each side of its line to the Humber; Howden is very near the Ouse and, with the neighbourhood of Cave, is accommodated by the Humber: thus a communication is established by water not only to the interior part of this large and flourishing county, and to the adjoining counties, but to the sea also, and of course to all the world.

It is now proper to shew the articles of traffic. In this county the produce of wheat is superior to its consumption, as the manufactures here are not extensive, nor the population more than necessary to carry on the cultivation and trade of this Riding; its exports consist of the following articles: of a very considerable quantity of wool, nearly if not entirely to the amount of its whole produce, of large quantities of grain, of bacon, butter, and potatoes, of a very considerable number of horses, cattle, sheep, and pigs. Most of the horses are bought up at York and Howden fairs, by the London dealers, who attend each fair twice a year for that purpose, and who also buy them frequently out of the stables of the country dealers. The London market takes off a small part of the grain, and a great part of the bacon, butter,

and potatoes; the remainder supplies the West Riding. The pigs are bought to keep up the stock of the London distillers; the cattle, both lean and fat, are sent to York and the West Riding; a great number of sheep, chiefly half fat, are bought on the Wolds by the turnip graziers and farmers of the West Riding: The wethers when bought, have turnips given them, and are killed in the winter and spring; the ewes are purchased to produce lambs, and are afterwards fatted.

This Riding, except on the eastern coast, where Newcastle coal is used, is supplied from the West Riding near Wakefield and Leeds with that article, of which the consumption is very considerable. The lime used in the south and west parts of the Riding, is brought from Knottingley and Brotherton. Thus a reciprocal trade is carried on between the East and West Ridings, particularly advantageous to both, and nature seems to have kindly interposed by so happy a combination, that as each county is adapted to supply the wants of the other, so the most convenient channel of communication is afforded by the adjoining rivers; the navigation of which, with the different branches of trade depending upon it, gives constant employment to a very considerable number of people.

Filey and Flamborough, two capital fishing towns, are situated upon this coast, and supply this Riding, York, and many parts of the West Riding, with the great advantage of fish.

To enter more largely into a detail of the produce of this Riding, or its consumption of the several articles here mentioned, would, I think, be of little use; it may be sufficient to say, that the exports and imports are so considerable, as to give regular employment to those engaged in their conveyance, and to keep the trade in a constant state of activity. Such a particular detail can only be necessary, when some comparison is to be made, or an investigation entered into to explain some doubtful fact. The cultivation of the mind is as necessary a preparation for the great and important work of agriculture, as for any other undertaking where information, knowledge, and application are requisite. Indeed I have the pleasure of saying, that many in this

Riding, by their sentiments and practice, show that they poss
a cultivated understanding, and may be esteemed an ornament
their profession; happier still should I be, had I not obser
some minds clouded with a degree of suspicion and prejudi
the constant companions of ignorance. The farmers in gene
are opulent, they have the power, and, I trust, the inclination
carry into execution every desirable system; as an opposite c
duct must not only be detrimental to the community, but
themselves also.

Having given a general description of the Riding, as to its
tuation, soil, and trade, I shall now proceed to take a nea
view, and examine whether this district, so well calculated
agriculture, the support of manufactures, and the extension
trade, is cultivated as it ought to be; in the prosecution
which, I shall be more studious to point out how far the pre
mode of management is consistent with the general principle
husbandry, rather than to attend to trivial inquiries, better
culated to amuse than to inform.

A GENERAL VIEW OF THE AGRICULTURE OF THE EAST RIDING.

Roads——The many advantages arising to a country from good roads, might lead us to suppose that in so opulent and enlightened a country as Great Britain, it would be rare to meet with any which are bad; we find this however, in many places to be a subject of great complaint, from which some parts of this Riding are not exempt, notwithstanding the roads in general are good.

A road from Selby-bridge across the country to Market-Weighton, and a bridge over the Derwent having been obtained, the Riding appears to be well accommodated with public roads. Those over the uninclosed part of the Wold division, require but little attention; the traveller however, need not complain, because the room allowed will ever enable him to find a good one; but this is not œconomical in the occupier of the land, though the land may be let at a low valuation, as great waste is often made by such a free range over it: for a considerable saving would be made by only levelling and keeping in order a suitable part thereof, which might be done at a very small expence. The roads in some of the inclosed parts, though dry and upon a rock, are chiefly, from their construction, very indifferent. The chalk-stone, of which the roads in this division are made, is not durable; but the mode of using it renders it less so. It is a prevailing method to form the road, by casting the earth from the sides into the centre; this forms a loose, damp bed of earth on which the stone immediately lies, and which constantly keeps it in a damp and loose state; and to stones of this nature, moisture must be ruinous. This method is not proper even for stone of the hardest quality, for a bed so damp and open, must occasion a superfluous use of them. A considerable sum would be saved, and a more convenient and durable road formed, by casting off the earth already on the road, and laying this stone on the driest

and most solid body found on taking away the soil; let th
solid body form the road, the sides of which should be sufficient
sunk, to keep it dry and carry off the water, without which
road can be good. In laying on the stones, attention should
paid to break them very small, and a sufficient breadth of ro
should be allowed, in proportion to the use made of it: to gi
it a sufficient rise in the centre, there should be a proportion b
tween the centre and the sides, according to the thickness of t
stone.

In the flat part of the Riding, where stone cannot be procure
some of the roads are indifferent; but considerable efforts a
making to improve them. In the east division, it is very co
mon to fetch gravel from the sea shore, two or three miles distan
In many parts pretty good gravel is found in the land, and
most parts so liberally used, as to put the roads into a progr
sive state of improvement. This would be much facilitated
following the above method of keeping the foundations dry, a
not casting any earth into them. Draining is in no instance mo
necessary than for roads, not only in taking the water off the
but from under them.

In other parts a coarse dry sand is found, which when judi
ously used, answers tolerably well; the carriages, however, mo
heavily upon it.

As few materials for roads, but sand, are found in the sout
west part of this Riding, and as it is so conveniently situated
water carriage, the cheapest and best mode to make the pub
and most frequented roads, would probably be to pave th
with cobbles, or paving stones, fetched from the Spurn-head
that purpose. The roads constructed in this manner, I am co
fident, would cost very little more than many others well situa
for materials, and from the moderate expence of their repai
would ultimately have very much the advantage. The sm
inconvenience arising from a paved road would be removed,
the pavement need not be of the breadth of the usual coverin
and sufficient room would be left on the sandy part, which
summer time would be preferred to the stony part, not only

horses, but also for carriages. Although the law furnishes means of supplying the deficiency of supporting the roads, when the statute work fails, yet when we consider how ill that work is executed, the additional assessment ceases to be a matter of surprise; For the farmer's servant considers this as a holiday;—The stone pit will not admit all the carriages to load at the same time; in course, many of them lose time by waiting; frequently no surveyor attends to direct their work, or keep good order; and if he does attend, he is either unskilful, wants authority, or does not sufficiently interest himself in the cause to perform his duty. The abovementioned reasons, with many others, have long induced me, and several judicious and respectable farmers in this district, to form this opinion, that a contract made by each township with a proper person, is the cheapest and most effectual method of maintaining the roads; and I find this opinion confirmed by experience. The money should be raised by an assessment proportioned to the value of the statute work; and when more is wanted, by a pound rate, as directed by the act. It may not be unworthy the consideration of parliament, whether it would not be better to abolish the statute work entirely, and substitute a mode upon the above principles. Probably on a close investigation, it may be found that the statute work may not form the precise data for making the road. This, with other parts of the subject, requires more attention than I have at present leisure to bestow. Perhaps the hint may be improved upon by others; and it is a question also with me, whether a general use of broad wheels, except for coaches, chaises, and carriages of the same kind, would not be of great utility, particularly in saving of the roads.

The statutes, no doubt, give great encouragement to broad wheels, but that only relates to the turnpike roads, and falls short of the intention; the terms are not sufficiently persuasive to remove early and deep-rooted prejudice; nor coercive enough to compel, where interest, that grand excitement, fails. The farmer is the most interested in the preservation of the roads, and the more easy manner of repairing them, because he uses

them the most, and the expence falls the heaviest upon him. His principal objections to broad wheels are, that in respect to iron, they would be more expensive, that they take a greater draught, that it would be very inconvenient to make new ones, and in some cases carriages also. From experience I can assert, that the same weight of iron usually upon wheels of three inches tread, is sufficient for one of six. That the strength of the same weight of iron is the same, whether thicker or broader. That the iron upon the broad wheels wears away less considerably, because the friction is not so great. It is well known that broad wheels do not take a greater draught, except in deep and narrow ruts, which would not exist, as the roads would be improved and rendered good by the use of them. And should parliament think it proper to enforce their general use, it might be gradually accomplished, probably in this manner; that every set or pair of new wheels should be of a certain breadth; and that after such a number of years (reasonable time having been allowed for wearing out the old ones) all wheels should be of the same breadth, and in the mean time, a proportionable allowance in the statute work or assessment should be granted to wheels of a proper breadth. Carts drawn by one horse, and not carrying more than a certain weight, might be excepted. The traveller would find great conveniency from a written board affixed upon the first house at each end of every village.

Drains.——Very few parts of this kingdom require a greater attention to this very important article in husbandry, than a considerable part of this Riding. Much has been done, and there yet remains much to do. A small degree of observation shews the effect a redundancy of water has upon vegetation, as well as on the health of the inhabitants and cattle; which forcibly demonstrates the absolute necessity of paying a most minute and strict attention to this evil. Before the present main drains were made in the eastern part of the Riding, a very large proportion of the inhabitants were afflicted with the ague, and were otherwise very unhealthy during the winter and spring; but that disorder is at present mostly abated, and is almost as rare here as

in the upland parts. An infinite number of acres, which previously, in a great degree, were half the year under water, are now dry. This, like most works of the kind, was not sufficiently general. Indeed few undertakings require a more unbounded scope than drainage, various parts however have lately been improved, and the drainage enlarged where it had been before found extremely insufficient. It still generally remains at and towards the outfall, in which part most drains are deficient; for they seldom are formed so as sufficiently to carry off the accumulating water. One striking instance is still found in that drain leading above Roos to the Humber at Cherry Cobb sands. The flatness of the country admits of very little fall, consequently the water moves very slow, so that the least addition to the usual height of water, immediately causes an overflow; and as there are several parcels of land which lie a little below the level of the common surface, they are flooded with almost every heavy shower, so much as to render the herbage or crop very precarious indeed. In this case, and uniformly when the fall is gentle, width is the great object, and ought to be applied to the drainage of most flat lands. This, peculiarly applicable to the drainage in question, with a little additional depth, would make it navigable, and would very much accommodate a considerable tract of country, and the contribution would be lightened by the double advantage derived from the improvement. It is only in cases like this, that a navigation and drainage are compatible. Another similar instance, and where a necessity for both exists, is found in the country extending from Frodingham-bridge, to near Burton Agnes, and probably in the country from the latter place to Bridlington. This plan, with a drain branching into the sea at Barmston, would drain and very much accommodate a very considerable tract of country with water carriage.

The river Hull in this division of country is very little attended to as a drainage; it is particularly useful as a navigation; it first formed, and still continues to keep open the harbour. By

deepening and widening this river, the most salutary effects would be experienced, both as to drainage and navigation. A considerable part of that land marked blue in the plan, extending from Malton to the country near Muston, is much in want of an effectual drainage; and the improvement to be derived from this measure, would fully reimburse the expence of carrying it into execution. The floods from the Derwent, are not so much the cause of injury to the land, as most people imagine; certainly however, much benefit cannot be derived from them, as the river Derwent, almost immediately, on quitting the barren moors of Yorkshire, flows over this land, and consequently cannot fertilize the country by any valuable sediment which it may have previously collected, like many other floods, which first flowing over fruitful country, become impregnated with a rich soil; and the meeting with a country nearly level, abate their rapidity, and from the slowness of their motion, deposite their accumulated particles.

Besides the loss of crop and herbage, the land receives another principal injury by the springs which run from the foot of the adjacent Wold hills, and burst forth where they meet with resistance from the soil of this vale, as the river impeded and kept up by the Malton mills, and other obstructions, does not take them off. The water is so much upon a level, that it insinuates itself into the soil, which thereby becomes unproductive, and exhibits a dark, spongy, coarse appearance. This mischief might be remedied by a side-cut near the mills, to take off the surplus water after a full quantity shall have been first provided for working them: the river by this method, would be kept to a certain height, except during the time of very high floods; and the mills would be enabled to work earlier by some days, and to take off the weight of water when it first begins to collect; they might also work longer before the floods would stop them. It will be also necessary to scour the bottom of the Derwent, and increase its width; and to cut a drain from the hills, to catch those springs and carry them into the river below the mills. Whenever all the above ideas shall have been carried into execution, 8000 acres of

land will be drained, with a yearly advantage of 20 per cent. upon the expence.

On the south-east part of the Riding, considerable pains have been taken to carry off the water; but here, as in other places, very few of the drains are sufficient, particularly at and towards the outfall. In this part, a great depth is also wanted; for, as it has been set forth in the Introduction, a considerable part of this district is very much injured by water, and no land so injured, more especially when sandy and spongy, can be made fully profitable until the water shall have been drawn off. The commissioners of the Hazel inclosure, in the southern division of this Riding, have set a very recent example of a main drain, in point of capacity. It would be too tedious to notice every deficient drain: what I have already said may be of some use. If every township will allow the necessity of their drains being good and sufficient, they should inquire into the construction of them, and remedy any defect through which the water is not perfectly discharged; the country would then be completely drained; as it is in the power of every township to do their duty.

However capacious and good the main drains may be, if the smaller are not in proportion, the water will be impeded, and mischief will ensue. This Riding is eminently deficient in this respect: the cause of it arises from the indolence of some, and the avarice of others; but principally from the blindness of too many, who neither consider the damage resulting from the neglect, nor the benefits accruing from the execution of this very valuable improvement. Every man must know, that by taking the water off any piece of land, the soil becomes dry and productive; nor is there a necessity for him to be a philosopher, or to be critically acquainted with the principles of vegetation.

Few interior drains or ditches are sufficiently wide or deep: this evil would be remedied for the expence of two-pence in every seven yards, which can never be an object: it is certainly more material to consider the benefit of a good ditch, both in respect to the strength of fencing, and growth of quick-wood, which may be planted on the sides.

I frequently have observed quick-wood checked in its growth, and not likely ever to become a fence; but which, when the ditch has been sufficiently deepened, has assumed a most vigorous appearance, and recovered its growth, so as to form a sufficient fence. I trust, the narrow ideas on this head, which I have noticed on my tour, will soon cease; and that the land requisite for enlarging the drains will not be reluctantly given up.

A slope of one foot for every foot in depth, may be considered as the best general proportion for the shape of drains.—For example: a drain of the width of four feet at the bottom, and of the same depth, should be of the width of twelve feet at the top. In strong clay, and warp land, the slope need not be so great; for where the drain is for a fence, it will sometimes induce cattle to go down one side, and up the other: but in most slight and crumbling soils this proportion is requisite. In fields of considerable length, the furrows, when kept open, may partly carry off the water: but they are frequently too long for this purpose; though there may not be water below the surface. Longitudinal drains, considered only as mere conductors of the water, have a very good effect; but cross drains, intercepting, gathering, and carrying off the water, are on all occasions the most effectual. Necessity must always regulate the size of drains; in general however it may be observed, they should always be deep enough to carry off the superfluous water, whether upon or below the surface.

To demonstrate the necessity of drains being kept clear and free, it is proper to remark, that to whatever height the water may be stopped, or rise, so much of the drain may be considered as if it had never been cut. We daily see many hundred yards in length stopped half way up the drain for days and weeks, when ten minutes work would remove the cause, and effectually clear the drain. Every farmer should frequently perambulate his farm for the purpose of discovering such annoyances, which he will readily perceive, when his drains shall have previously been put into complete order; so that even a trace of the crossing mole will not escape his notice.

The necessity of covered drains, will evidently appear from the description of the soil of this division: they are sometimes used; but there still remains a large scope for that very necessary operation. The intention of executing this work appears general, though the want of energy protracts it, for few persons venture deep enough; many go only to a certain depth, however deep the spring may lie. I am confident, in many instances, a very small number of drains, of a necessary depth, would be sufficient. Some cut to a certain depth, about the width of a foot; then with a narrow tool, make a deeper incision; and upon the shoulder thus formed lay a sod, as directed by many writers upon this subject. Others cut and fill with thorns, &c. others with stones put in promiscuously. Necessity is the mother of invention; and when the best cannot be procured, inferior materials must be used. Where stones can be found, my method is, to set one on each side upon an edge, and cover with another; and so on throughout the whole drain: this forms a free passage for the water; I then put in a few refuse stones over them, which keep the drain open still higher; and would, on the breaking or slipping down of the coverers, still afford a vacancy for the water. When the stones are rather thin, one cart load will do thirty yards; and where the carriage of this article is convenient, the expence is moderate. I should prefer stones, though brought from a considerable distance, because they are to be depended upon. I have now the pleasure of seeing drains run with a copious stream, which have been so made, for twenty years. The safety and durability warrant the expence; for (as I have observed before) open drains are always ineffectual in proportion to the obstruction the water receives in its course. In the open drain, any impediment is readily found out; in the covered drain, it is latent, the discovery difficult, and the remedy expensive. Were the powers vested in the manerial courts properly executed, the improvement of the drains might be greatly assisted, and various other local matters might be adjusted, according to the original intention, and the wisdom of our forefathers, who instituted these courts to bring home justice to every

man's door; and that the first steps towards redress might begi
in the vicinage. To render drains effectual, the compulsor
power of making them should be extended equally over all; fo
if the township of A performs its part, and B, through which
drains, will not, but shall insist that it is contrary to usage to cu
one foot deeper, though such cut shall be evidently beneficial
both townships, where is the remedy of A? We know there
such a thing as a court of sewers; but how is that conducted
Something therefore should be done by parliament, to give fu
ther effect and energy to this very important object; and one ac
equally beneficial to all, should be adopted as a remedy. As t
benefit of most drains extends beyond a temporary improvemer
they ought to be made at the expence of the land-owner; a
the tenant should pay in proportion to his yearly rent, accordi
to his interest derived from these drains; except when his ter
shall be so long, that he may be repaid with a fair and just r
turn for the adventure.

Fences——In this district are of great importance, and fro
the exposed situation, and chalk rock in some places, requi
more than ordinary attention. Those upon the Wolds are of tw
descriptions; first, walls made of turf taken from the adjoini
land: these rise four or five feet, with a base of three or fo
feet, diminishing gradually to the top, equal in width
half the base, and sometimes covered with a projecting so
The expence of building these walls varies from twent
pence to half a crown per rood of seven yards running measu
The sods are cut as thick as the soil will admit, and laid with t
grass side downwards. The consumption of the soil is consid
rable; the work is ill executed in general, and not very durabl
though when well performed, it will remain several years; a
answers tolerably well for temporary divisions; when these wa
become unnecessary, the soil is restored by levelling them.

The second description of fences is formed of quick-wood, d
fended with posts and rails in the usual manner, which in ma
parts of the Wolds, where the soil is good, and the elevation m
derate, thrives well; in parts of a different description, t

planter will vainly attempt to raise it, at least on the usual plan; many thousand pounds have been in this manner ignorantly thrown away.

Those persons who make a fence in the best method, mark out a long slip or line, of the breadth of six feet, they then take off the soil on each side of the line, to the extent of four feet, and cover to the same width the centre of the slip formed by this method of three strata of soil; they next lay the earth taken out of the side ditches on the vacant spaces, or edges of the slip, and adjoining the abovementioned strata, and form the whole with a gentle rise, gradually declining on each side to the centre, where they plant the quick-wood in three strata of earth, and give it the advantage of deriving its nourishment from a deep soil, which always catches every shower, and in summer preserves a proper moisture.

As soon as the quick-wood shall have arrived at such a degree of maturity as to spread its roots wide for support, they then throw down one side of the bank into the adjoining hollow, whither the roots will soon follow. This method, as practised in some southern counties, and imperfectly in one part of this district, I have communicated to the Society of Arts. The allowance of land may be considered as extravagant; to raise a fence, is an object of great importance, but the land is of little value.

It is necessary to keep the hedges low adjoining the roads, to admit the sun and air, so essentially necessary for their preservation, and for the consequent accommodation of those who travel upon them. It is not only in this case that clipping of hedges has a good effect; I have for some time considered that the injury received by them in exposed situations, particularly near the sea, proceeds from the sharp air which blows through them, when thin and open; but has less effect, and does not injure them so much, when by their thick foliage, they form a barrier against it; some, though exposed to the sea air, have been clipped yearly from their earliest growth, and appear to thrive infinitely better than those which have not received that attention. These, as far as we can judge at present, look flourishing, and give us every reason to suppose, that when they shall arrive at matu-

rity, they will afford indubitable proofs of the success of this me-
thod, which indeed is very much adopted even at present. The
expence is small, when compared with the advantage derived
from it; nor does this mode preclude the general means used for
shelter, the raising a bank behind the hedge, or the planting slips
of land with furze.

In the flat parts of this district, where a hedge is easily raised, the
hedges are still very indifferent in many places. It is well known
that quick-wood will grow on soils of a moderate quality, when
not in a situation too much exposed, when defended from cattle,
and kept clean and dry: but when these essential points are not
observed, it is in vain to plant it. The two first require no great
skill; the latter is overlooked from ignorance, or inattention to
the baneful consequences of not effectually taking away the water.

Cutting of hedges is variously practised, and the vile custom
of heading them at the height of three, four, and even five feet
prevails in many parts. There is but one principle to be observed
in this case; that of cutting them down to the ground, whether
the mode of laying them is adopted or not. When this is prac-
tised, leave as few live stakes as possible: let not the layers be too
numerous, and divest them of their twigs. How often do we
see the whole contents wattled among the stakes, and jammed so
close, as nearly to destroy the whole hedge!

In order to make a fence more secure, particularly fence-drains
the water is stopped in the ditch or drain. Those who practise
this, are not aware how much they injure the land. It may be
alledged, that it is only done in summer, or in strong land, where
the water will not readily insinuate itself into the soil. As to the
first, drains, if necessary, should never be stopped; and as to the
latter, it must be considered how unwholesome stagnant water is
in itself, and how much it infects the air. Indeed, it is a little
extraordinary that this poor aid should be resorted to in some of
the first warp lands, where quick-wood would in seven years be-
come a fence, and contribute largely to break the sharp air which
often annoys those marshes in the spring months, from their ge-
neral situation near large rivers, or the sea.

The gates, in many parts of this district, are not properly attended to. Their form is of little moment, so they be but effective: they should be so hung, that when they are opened, they may shut of themselves, and be secure: when this is not the case, how considerable a portion of time is wasted in opening and shutting them! the work of a man and four horses may be said to be frequently taken up in this troublesome process: for we cannot but calculate the lost time of the horses, when they are delayed and detained from their work by this unnecessary employment of their driver.

The advantage of proper fences, and good gates, that shut and open readily, is known to every skilful farmer. Flocks are naturally prone to ramble; and where there is a slight fence, or a gate unshut, they are sure to find it: the injury they then do to a field of turnips, corn, or grass, is not the only consideration, for they become unsettled; nor will they be satisfied with their usual pasture for many days, nay, even weeks; this renders them less profitable and thriving; and disappoints the expectation of their owner, who, for want of this attention to his fences and gates, finds himself injured not only in his crops, but in his stock.

Buildings.——Many of these, in most parts of this district, are covered with thatch, and some few are constructed with mud-walls; an equal quantity, however, have been re-built of solid materials, and covered with tile. The use of thatch, as a cover to buildings, deprives the land of manure, in proportion to the straw employed for thatch; and when the buildings to be covered are large, the injury to the land must be very great. The walls on the Wolds are generally constructed of brick, but several also are formed of chalk stone, which, when raised early in the spring, and left two or three months to dry, will form a wall that will stand some time. Near Malton, the stone, being pretty good, is in general use. The houses, both of the old and new construction, are without much order or contrivance: this inattention is unpardonable when it is necessary to raise new farm houses; but where additions have been made from time to time, it is excusable, and even unavoidable.

It will be judicious, when the repairs of an old farm house may

be necessary, to draw a plan of every proposed alteration, and to keep such plan, till the alterations shall have been entirely executed.

In the construction of the farm offices, though room may not be wanting, due attention is not paid to this circumstance, for the advantage of the farm.

Farm offices, when properly built, should form a square; and all the offices should be placed as conveniently, and as near each other as possible: the fold-yard should be in the centre; and the pump and watering-trough should be near the back door, where all the cattle should be watered, to prevent the loss of their dung. The fold-yard should be concave, into which every thing convertible into manure, even the drip, not only from the kitchens and dairy, but also from the eaves of every building, should be collected; and if at any time this should cause a surplus of moisture, it should be carried by a drain into a reservoir, which should be made water-proof, both for receiving and retaining it: this reservoir should be emptied occasionally upon the land, by a water-cart; or should be filled with earth, or any thing equally capable of imbibing the moisture, and of being thrown out again, and spread on the land as manure. Such is the inattention on this head, that we very commonly see a fold-yard with cattle at straw upon a hill, the moisture running into a stream of water, or the town street; and the farmer wasting in this manner this very valuable article. The stack-yard should adjoin the barn, to prevent waste by carrying the corn from a distance; and the granary should, if possible, be over the carriage-shed, or any other place where it can be built in a situation equally cool and airy, and not over a stable. There are few instances where money is laid out more commendably, and to better advantage, than in building farm houses. It would be sound policy to attach every man to his home, by rendering it as agreeable to him as possible: neatness and order promote tranquillity; and no set of men are better entitled to this enjoyment than farmers, fulfilling the duties of their station with propriety; munificence no where shines forth with greater lustre than in the land-owners, when they perform their part towards promoting the happiness of a respectable tenantry.

Although the cottages are improving, yet many are very uncomfortable and unwholesome dwellings, most of their floors are below the surface of the ground, and their windows often will not open, nor give a free circulation to the air; this requires particular attention both from the landlords and tenants of the villages, for it is well known that a cottager can neither rebuild his cottage, or be at any considerable expence in alterations or repairs. These men are entitled to as much comfort as their stations will admit, and their health is not only of importance to themselves, their families, or the farmers, but also to the country at large. Some gentlemen in this district, have been very laudably attentive to this subject, and have built many houses for their labourers on a comfortable and convenient plan.

I have annexed to this Report, a plan of the house of a gentleman's bailiff, with the farm-yard and buildings, in this Riding, and another of a farm-house and offices, not to be found in the Riding, although many farm offices nearly on the same construction, but not so complete as this, are to be met with: as they are sent merely to shew the construction, they are without a scale: but if they should be copied, a scale may be adapted according to the size of the farms for which they may be intended. I have sent also another plan of a barn, stable, beast-house, &c. under one roof. The expence of buildings is nearly the same here, as in most other places. As the district joins the sea, timber and deals are moderate.

Implements of Husbandry.——The plough commonly called the Rotheram or Dutch plough (their construction being nearly the same), is generally used, and is allowed to be the best plough in use for all land; for though it is of the most simple construction, yet it effectually performs its work. Proud's trenching or double plough is used by some, and answers well. The first share pares up the sod, and the other turns over the mould upon it. This plough is likely to be very serviceable, if used with judgment. The depth and quality of the soil form the criterion of using it. This plough may be set to different depths. It is requisite to plough up fresh earth, but the skill of the

ploughman depends on his not ploughing too deep. The drill is very little used, nor does that use increase. Proud's drill is the most in use for sowing turnips; it delivers the seed regularly, and may be fixed to any plough: almost every sort of harrow or roller is to be found here, the lighter ones generally on the Wolds. The harrow teeth are often not sharpened, and when the land is foul they are not dressed and cleaned, which should be done by a person following, and lifting up the harrow to discharge their contents when they fill. These inattentions ought to be remedied, as they are very detrimental to the farmer.

The waggons in the greatest part of the district are drawn by two or four horses. They are generally clumsy, with low fore-wheels that lock under the body, which in course is raised by heavy cumbersome blocks, and runs very heavily, we may hope the propriety of forming them on a better and more light construction, with higher fore-wheels, will soon be perceived; this would be found of great advantage, the farmer's horses would not be harrassed by drawing an unnecessary weight, and a considerable saving would be made both of wood and iron in the construction of waggons, more especially of those employed in the farms. Such as carry corn to market, should be stronger and heavier. Few carts are used in many parts of this district, though better adapted for carrying manure than waggons, which are very inconveniently employed for this purpose.

The breast spade used in draining, is found very useful: it is driven forward by a man in the same manner as the paring spade, and is not much unlike a common hay spade turned up on both sides; it takes out an entire sod, and is very useful in cleaning out furrows, and cutting small grips or top drains in flat lands.

I know of only one threshing machine in this district; these machines save nearly half the expence; but some doubts have arisen, whether the corn is as well threshed as by hand. No doubt a little deficiency on this head will overbalance the saving: some also assert, that the straw is not so good for the cattle, as they do not receive it so fresh, as when the corn is gradually

threshed. Another objection has been made to their use, that if they were generally employed, there would be no work for labourers in the depth of winter: I think this objection of no force; for there is little doubt of the labourers finding employment, except in very long and severe frosts. It must be observed, also, that even the machine cannot be worked without them. I think the decision, for or against it, depends upon the question, whether it performs the work clean or not: in some instances, I have observed it well done; in others so badly, that the corn left in the ear would very nearly have paid for the threshing. A little more experience, however, will decide the question. It would certainly be an advantage to work them by wind or water; for it is slavish work for the horses, and a horse in a mill is an unpleasant sight. At all events, they will not answer but for a large corn grower; as the interest of the money laid out in the first cost, added to the wear and tear, would be equal to threshing the crop of a middle sized farm by hand. The winnowing machine is generally used; and no considerable farmer should be without it. It is so universally known, that a description of it is unnecessary: the saving of labour, and neatness of execution, gives it every recommendation. The price varies from four to six pounds, according to the work and materials.

Labour and Wages.——Farms of considerable magnitude, are generally worked by a foreman (if upon the Wolds, by a shepherd), with from two to four other servant men, and a suitable number of day labourers, according to the size of the farm: the labourers sometimes work by the day; sometimes they take their work, as threshing, ditching, &c. at a fixed price for a certain quantity of work: paring and burning is generally taken, and some corn also reaped at a certain price per acre; but I think a greater number perform this work by their own servants, and by day labourers, men and women, who, during harvest, come in great numbers to Malton to be hired, from the North and West Ridings, particularly from the neighbourhood of Richmond and Knaresborough, and the western dales of Yorkshire; most of these people go upon the Wolds, and into the eastern parts of this district: the redun-

dancy of inhabitants in the North and West Ridings, thus supplies the deficiency in the east. The foremen and shepherds have from fourteen to eighteen pounds, with victuals, lodging, and washing; a common man servant has from ten to thirteen pounds; women and boys, from three to eight pounds. Day labourers, when supplied with victuals, earn from Martinmas to Candlemas, four or five shillings per week, from Candlemas to Midsummer, five or six, from Midsummer to Michaelmas, eight or nine, from Michaelmas to Martinmas five or six. If they find their own victuals, the wages from Michaelmas to Martinmas, and from thence to Candlemas, vary from nine to ten shillings, between Candlemas and Midsummer, from ten to eleven, and from Midsummer to Michaelmas, from fourteen to sixteen. Women receive from sixpence to eight-pence for weeding corn or fallows, and from eight-pence to a shilling for hay-making: in harvest, they receive from one shilling to one and sixpence, without victuals. Threshing wheat varies from 2 *s.* 2 *d.* to 3 *s.* 4 *d.* per quarter, barley, from 18 *d.* to 2 *s*, oats, from 8 *d.* to 1 *s*, beans, from 1 *s.* 3 *d.* to 1 *s.* 6 *d.* Reaping wheat varies from 6 *s.* to 8 *s.* per acre; oats and barley from four to seven; beans from five to seven. Barley and oats are generally mown, but sheafed, except in some of the strong lands, where they are reaped. Paring and burning vary from 20 to 30 *s.* per acre. The time of labour, in winter is from light until dark, in hay time and harvest, is from five until seven or eight—sometimes later; at other seasons, it lasts from six to six, and occasionally earlier and later. The farming servants are well fed; and there are few countries where they and the labourers work harder. Orderly house-keeping, and wholesome diet, are great requisites in rural economy.

Price of Provisions.——The average prices of meat, fish, and butter, by the pound, of milk by the quart, and of grain by the bushel, in this Riding, in February, 1794, were as under:—the price of beef is calculated on the quarter, or carcase.

By the lb.	*s.*	*d.*	*or by the Cwt.*	*£.*	*s.*	*d.*
Beef - -	0	3½		1	10	0
Mutton and pork	0	4		1	12	0
Veal -	0	4½		1	16	0
Fish - -	0	3½ per lb.				
Butter -	1	0 per lb. of 18 oz. which I consider as the medium weight; for butter varies in weight, in different markets, from 16 to 20 oz.				

Milk at Hull, in summer, is 3 *d.* per quart; and is rather dearer in winter.

Per bushel.	*s.*	*d.*	*or per quarter.*	*£.*	*s.*	*d.*
Wheat -	5	9		2	6	0
Barley - -	4	1½		1	13	0
Oats -	2	6		1	2	0
Beans - -	4	6		1	18	0

The bushel in the east, is less than in the north-west part of the Riding. This, with the different weight above noticed, shews the propriety of equalising both weights and measures. The prices in the several markets of the Riding, differ very little at present, nor are likely hereafter to differ, particularly in respect to corn, because it ultimately goes to the same market. Meat will probably advance, as it generally does, in April, at which time the turnip-fed beasts and sheep are nearly killed and sold; it will continue higher till August, when the grass-fed sheep and cattle become more plentiful; the prices then begin to fall gradually to the present prices, or differ but little from them.

Victualling Office.——Before we leave the subject of provisions, it may be observed that this district, particularly the eastern part, produces and fattens a great number of large cattle. As they are bred and fed in the same district, and as there is no expence or dealer's profit in driving them from the breeder to market, not to mention the contiguity of Hull, beef can certainly

be afforded as low here as in any other part of the kingdom;
Government might establish a victualling office in this Rid
with a very considerable advantage, both in respect to supply
price; to this office an additional supply would also be furnis
from the other neighbouring parts of Yorkshire, and from thos
Marsh Land and Lincolnshire, all of which places are situate
very easy distances: these considerations are certainly suffic
to warrant Government in making the trial.

The above plan, if adopted, would certainly save a very co
derable expence, which the nation at present pays; and w
such saving can be made, justice to the public requires it. C
petition only reduces the price of any article to a proper medi
Government at present is supplied with cattle, generally bou
in Smithfield market, many of which are driven from a consi
able distance, within thirty miles of Hull, and from 80 to
from London. Most of the fat cattle, therefore, purchased
Government, are driven from an average distance of 110 m
at an expence of nearly 12*s.* per head, besides a loss of we
in driving, moderately stated at four stone, of 14 pound
the stone; and which, at 4*s.* 6*d.* per stone, amounts to 1
to this again, as the grazier receives great part of the c
fed for the London market lean from the more northern c
ties, the expence of driving them, with the drover's pr
must be added, which would not be less than 12*s.* did no
country adjoining Hull supply part of these cattle, on w
account I deduct something saved in driving and waste, or
the total saving, therefore, amounts to 38*s.* per beast, aver
at eight hundred and a half, or sixty-eight stone. But w
we consider the real variation between the markets in this dis
and London, it may be moderately reckoned at 45*s.* per ox
we farther estimate the superior quality in the meat of a
killed after a journey of a few hours, or of two days at most,
that of an ox driven eight days, the advantage of establishi
victualling-office here, must appear still greater. The above
culation, taken only at 45*s.* on 68 stone, makes a saving of
than 8*d.* per stone of 14lb.; for a great part of the provisio

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might not counterbalance the advanta
ment would derive

this office would be sent from Hull to every garrison abroad, at a rate as cheap as from any other office; but as a supply would be wanted frequently for the navy, and furnished from this port, at a dearer freight than from the victualling-office in London, I deduct for it one penny per stone: the article is therefore cheaper by 7 *d.* per stone, and at the same time better.

Draught Cattle.——A considerable number of oxen are used, mostly in yokes and for carriages, in the farms; very few for the plough, as they are deemed too slow for that purpose, and in warm weather cannot stand, with sufficient ease to themselves, that continued labour for so long a time which the plough requires. In carriages they often get short intervals of rest whilst loading and unloading, and as this sort of work best suits them, the greatest portion of it should be done by them, which would be a considerable advantage to most farmers. The yokes should be entirely abolished, not only because they will draw with greater facility without them, but the oxen are less confined, and enjoy the air much better.

In many parts, the draught horses are slender, very indifferent, and evidently unable to go through a day's work, which is a great loss to the farmer, and detrimental to the cattle. More are consequently kept than would be necessary if they were better, and the farmer incurs an unnecessary expence, for a bad horse takes as much keeping as a good one; the disappointment also, arising from the non-performance of their work in due time, is often attended with serious consequences. We may frequently observe four poor weak horses, drawing with difficulty five, or at most six quarters of oats, in one of those clumsy heavy waggons before described, which two able horses in a well constructed cart, would draw with the greatest ease, or, should the hilly part of the country render a cart inconvenient, in a well-constructed light waggon. Some often harness four horses to a plough, when two good ones would do as well, and a driver would be saved, as the ploughman, by means of strings could, as in the West Riding, hold the plough and drive the horses at the same time, which is a great saving; and a person well accustomed to

it, had rather hold and drive the plough at the same time, than have it driven by another.

I have often in this Riding seen a boy of 15, with a pair of good horses, plough as well, and more, than a man, with a boy to drive, could do with four horses in other countries.

No doubt but in wet seasons and strong clay land, it is proper that the cattle drawing the ploughs should walk in the furrow, and consequently must be harnessed at length, and walk single and move slow. Oxen may here be used; for there is a coolness in the air upon the surface of this kind of land which suits the ox, and the foot of the ox is best adapted to land which is very wet and stiff, as it expands when setting down, and contracts when lifted up; and therefore does not stick in the soil like that of a horse. It is very usual, in hot weather particularly, to order the oxen to be taken to work very soon in the morning, under the idea their work should be performed in the coolest part of the day. By this means the cattle are taken from their pastures before they have scarcely had time to feed, so that they are not able to sustain themselves during their work; and at the very instant the heat is the strongest, when they are the least able, they finish their work, generally about eleven or twelve, if they began their work at three or four in the morning.

After having been thus overcome with fatigue, they are turned into the pasture, where they are additionally incommoded by the heat and flies, and cannot keep on their legs to brouze; whereas if they were not taken to work till about six o'clock, they would by that time have satisfied themselves with food, and be in heart to go through the heat and fatigue of the day, with much greater ease, nor would they suffer so much, except in exceeding hot days, when particular care should be taken to drive them gently. On such days they had better be at work, than fighting with the flies, or running about the pastures to escape them; if after their work they shall be turned into the pasture, they will enjoy their grass, lay down and rest themselves, and when refreshed will rise and eat again. Thus managed they may be said with their morning's grass included, to have been three times fed

instead of having received one bait only under the above mentioned management.

This treatment is essentially requisite for the ox, which being a ruminating animal, cannot fast long, and therefore should by no means be put into the yoke with an empty stomach; the person who has the care of them should be regular in administering food, and careful in proportioning the work thereto; for it should be continually kept in mind, that one day or hour of excess, or ill treatment, will be productive of more injury than years of regular work; care should also be taken that they may draw easily and evenly; their temper should be carefully studied without passion, and they should be treated consistently.

These observations may be enforced by moral and serious arguments; husbandry work must be progressive, and improper and desultory exertions uniformly defeat their intended purpose. Although the Creator of all things has given a superior authority to man over all other created beings, yet he was never designed to abuse the labouring animal which procures him food, nor to obtain that food by oppression.

Inclosures and Population.——Some are of opinion that inclosures have been the cause of a decrease of population, but a far greater number maintain contrary opinions.

Additional labour, an improved air, and an increase of produce are certainly favourable to an increase of population, these are in general the beneficial consequences of inclosures, and this confirms, therefore, the latter opinion. In addition, the subdivided state of the land affords a greater opportunity of residence, and diffuses a more equal distribution of the comforts of life; in particular cottagers are hereby accommodated with land for the maintenance of a cow, and the growth of potatoes, all which must have a tendency to promote marriages and consequently increase population. Many open fields and commons in this district have been inclosed; and the taste for inclosing has been carried on here as rapidly, and to as good purpose, as in most other countries; and the value of the land has not only increased proportionably above the original rent, but has paid five per cent. for

the money laid out; other very salutary consequences also result from inclosures: but this observation does not attach to all, either from the proprietor's want of knowledge, or reflection on the nature and situation of the land; or from the sinister views and endeavours of a solicitor, and from the train of jobs which inclosures when ill conducted needlessly create: much land on the Yorkshire Wolds has been inclosed, which, for the above reasons, might have been with more advantage left open.

The intent of an inclosure is, that each proprietor may enjoy his share in severalty, and in course appropriate it to the most suitable purpose. But what resulted naturally from inclosures so ill considered as those alluded to? the barren state and exposed situation of the land, prevented the growth of the fences, which could not be, or at least are not raised. This new mode of cultivation superseded the ancient mode of cultivating the land, as directed by the wisdom of our forefathers, and for which they had great credit: it is admirable to see the uniformity and good order they established, which with the introduction of some modern improvements hereafter mentioned would have saved an immense expence to the parties, and rendered their property more beneficial. It is not, however, to be expected that even these improvements will be adopted in all cases without the aid of parliament. Several townships are now inclosing, and the inclosure of many more is under consideration; and certainly such townships, more particularly those situated in the flat parts of this Riding, would receive great benefit from the drains, and the subdivision fences acting as drains, which in all inclosures greatly promote the draining of the land.

It may be proper here to observe the great necessity of having a well experienced person to view the township, and give his opinion as to the propriety of inclosing it; by this plan, the above errors might be avoided, many useful heads for the bill might be proposed, and a more early reconciliation and agreement would be promoted by so able a mediator, especially should the bill be submitted to him, before any motion should be made respecting it in parliament.

In the future division of commons, it might be very proper to insert a clause in every bill, empowering the commissioners to set out, allot, award, and vest in trustees, a certain proportion of the common, which trustees should be directed by the act to securely fence such allotment, and plant it with wood suited to the soil, at the expence of the owners and for their use, according to their several interests therein: the act or the award of the commissioners should also direct how and when this wood should be cut; and a certain quantity of oak and ash should be planted in every wood, where the soil would not prohibit their growth and improvement. This plan would provide a certain supply for future wants of this useful article, and greatly ornament the country at a very moderate expence; it might also be proper that the allotments in lieu of such shares of commons as belong to the crown should also be planted.

This Riding contains very little, if any, of what is generally termed waste land, such as high moors or mountains: the commons vary in extent, from two hundred to two thousand five hundred acres, but the generality contain from three to five hundred, and all of them may be converted into useful land by drains, subdivisions, plantations, and other improvements; some are stinted (as no doubt most, if not all, commons were originally), but others, for want of due attention in the commoners, are stocked without number or limitation. When commons are not stinted in proportion to the stock they are capable of keeping, very little benefit is derived from them; and though the parties cannot agree to inclose, they should not omit to stint and drain the commons: this plan would render them of some benefit, and introduce a progressive improvement, until a more beneficial and decisive one could be adopted. It is not a little extraordinary to see a starving stock upon a common of five hundred acres soaked with water, when the expence of a few shillings for each right, prudently laid out in drains and bridges; would double its value. Such is the obstinacy of men, and so difficult is it to induce them to form the same opinion; though an union of sentiment would much more materially promote their interest.

Farms and Cultivation.——It is natural to suppose that in a district so extensive, with such a variety of soil and situation, various modes of management will be found. The farms vary in rent from five hundred to one thousand pounds per annum; but generally from five pounds to two hundred, except very near York, Hull, and Beverley, where the land is occupied in pasture and meadow, the farms consist of grass and arable land intermixed; of some one-third part is arable; of others the grass and arable lands are nearly equal; others again, consist chiefly of grass with a very small proportion of arable. The manner of cultivation varies as much as the nature of the land.

In the strong and flat lands, most farmers summer fallow for wheat, and afterwards sow beans or oats; and several not satisfied with two crops, take a third. Others summer fallow for oats, barley, or beans, after one of which they sow wheat and barley, or oats; some, particularly upon the warp lands, plant potatoes after a winter and spring fallow, which are succeeded by a crop of wheat, and some take two crops after them. Some winter and spring fallow for flax, others sow their fallows with rape for seed, or to be eaten off in autumn; after which wheat, and sometimes also oats are sown, and one or two crops are taken.

The following course of crops is adopted by some farmers:

1. Fallow limed.
2. Wheat.
3. Beans.
4. Barley with clover seed, on one winter and two spring ploughings.
5. Clover manured.
6. Wheat.
7. Beans.
8. Barley manured with top dressings, as pigeon dung, soot, &c.
9. Beans.

In some of the common fields, one half is fallowed each year, which, with the balks or borders, lies common for the sheep and cattle of the township, the other half is sown, so that there is but one crop to a fallow.

This also is the custom of the common fields in lighter and more free lands. The grass part of the strong and flat land above described, is well suited to horses and cattle, and many of

the latter are bred, fed, and reared there; many horses also are here bred and reared. But this division of the Riding (a very small part excepted) is not suited to sheep, of which a fatal proof has recently been given, in the death of a considerable number of this stock by the rot, and in the general infection from which very few, if any, escaped; except those on the marsh, and some on the warp lands.

The following are the courses adopted on the lands lighter and more easily worked:

1. Turnips.	1. Potatoes.
2. Barley, with seeds.	2. Wheat.
3. Grass.	3. Oats, barley, or pease.
4. Grass.	
5. Wheat; and sometimes another crop.	

The first course varies also in this, that some fallow their land with a winter and spring fallow only, on which they sow barley; some courses also begin with flax, and afterwards are similar to those adopted on strong lands; some farmers cultivate a few patches of cabbages and carrots, and the cultivation of the last-mentioned vegetable extends itself.

The arable land, in several open fields, which occupy a considerable share of the Wolds, and in a few inclosures, is cultivated in this manner; one furrow is ploughed, and one left; the land so managed is said, in the country term, to be rowed; it lies in that state for six weeks or two months. It is then manured and ploughed in July, afterwards it remains unworked till February when it is again ploughed; it is ploughed a third time in April, and sown with barley, followed by oats or pease. Other courses are again as under:

1. Turnips.	4. Wheat.
2. Barley, with seeds.	5. Fallow.
3. Clover.	6. Oats, or pease, or barley.

Others fallow one-third of their field land, and adopt this course.

1. Fallow.
2. $\frac{1}{2}$ wheat and $\frac{1}{2}$ barley.
3. $\frac{1}{2}$ oats and $\frac{1}{2}$ pease.

The wheat is followed by oats, and the barley by pease.

The greater part of the Wold townships which remain open, have a large quantity of out field in ley land, that is land from which they take a crop of corn every third, fourth, fifth, or sixth year, according to the custom of the township; after which they leave it without giving it any manure or fallow, in the same situation as when they reaped the crop, on this grass ley, and on the fallows, the sheep are depastured, and are folded on the latter in the night, a practice destructive both to the land and sheep. The fold conducted in this manner is beneficial to the arable land, but the farmer does not consider how much he robs his pasture land, while he saves his money for the moment, by manuring land without being obliged to purchase manure.

The open or uninclosed townships on the Wolds, as well as those in the flat or lower divisions, have common pastures, mostly stinted to a certain number of ox-gangs,* with this difference, that those on the Wolds are open, and the stock staff held,† and those in the lower country are generally ring-fenced, and the stock confined. Besides the open or uninclosed townships, and those recently inclosed, there are several others which are a sort of ancient demesne or inclosure.‡ These commonly have a large quantity of land belonging to them without subdivision fences, which land generally consists of extensive pastures, sheep walks, or rabbit warrens, and some closes near the homestead. Many of these have suffered the same havock by the plough, as the ley lands just mentioned; for many thousand acres, after having

* An ox-gang is generally used for a certain quantity of land, equal to twenty statute acres; it here implies a mode of calculating adopted by the respective townships, in stocking their stinted pastures on which the proprietors turn their cattle or sheep, in a proportion settled by agreement between themselves, and founded on the quantity of land or ox-gangs they respectively hold in such pastures.

† That is, when an open pasture or common adjoins others of the same description, the stock upon it is kept within proper bounds by a shepherd or neat herd.

‡ I apply this term to land formerly occupied by a lord of a manor for his own immediate use.

been pared and burnt, or otherwise broken up, have been impoverished by many crops of rape and corn, with only one intervening fallow without any manure. Sometimes turnips have been sown, and fed off by sheep; but it must be considered that these turnips were the produce of land, unimproved by the addition of any manure; consequently the soil gains nothing by the manure of the sheep which feed upon the turnips; this can only be considered as a return of that, which has been first taken from the soil.

A judicious introduction of crops suited to the soil, constitutes a great part of the science of agriculture. This, I fear, has been the least understood or attended to in theory or practice: the land, which we have just described, points out strongly how incorrect the practice of agriculture is even at this day.

In cultivating an extensive district, or even a small farm, we should consult nature, which when consulted will point out to us the proper cultivation; for although the ignorance of man may not discover the right mode, yet such mode does not the less exist: the laws of nature are unerring and immutable.

The soil of the flat or lower lands of this district is deep and of a good quality, and as these lands are situated in a mild and genial air, meliorating and increasing vegetation, they may be cultivated with the plough, under proper restrictions. This mode of cultivation is practised, and is much facilitated, by the easy acquisition of lime, and all kinds of manure, from Hull and the several contiguous navigations. These lands, also excellently adapted to the breeding and support of horses and cattle, should be more particularly applied to this purpose by the farmer, rather than to the breeding or fatting of sheep, for which fatal experience has proved this land to be wholly improper, as that animal requires a different soil and situation; the neighbouring Wolds, and similar places, are the favourite spots for it. The farmer should keep this flat land dry, moderately plough, and sow it down with grass seeds, before the land shall be exhausted; and he should always lay on manure in proportion to the crop taken from the land. The plough thus managed will have the desired effect of assisting the land, by forcing its vivifying powers

into action without exhausting them. This method will save a great consumption of hay now used every spring; and there will be a forward, wholesome herbage, congenial to and proper for young stock. No farm, in proportion to its size, should be without its number of acres yearly sown with grass seeds. It is proper here to remark, that land of the very first quality should never be ploughed; its native richness preserves it always in a high state of vegetation.

I shall here observe, as I said before, that horses and cattle are suited to the flat and low grounds; sheep to the Wolds and elevated situations. A stock of sheep is of such importance to the farmer, grazier, manufacturer, and merchant, and indeed to the public in general, that on the Wolds, and other places equally adapted to them, no more land should be ploughed than may be requisite to produce turnips for their accommodation, and to meliorate the land so as to enable it to maintain a greater stock. By this management the land will also produce more grain than can be conceived without attention to the subject. Land, like the animal creation, certainly requires a degree of rest, and therefore should be occasionally sown down with grass seeds, and for a time kept in grass; this remedy will be more or less effectual in proportion to the richness or poverty of the soil, when sown down with grass seeds; and the stock feeding upon it will thrive more or less in the same proportion, and make a greater or a less return to the owner. When land is laid down in good condition, the vivifying principles of vegetation are supported and augmented by the manure from the stock feeding on the land; and the richness of the soil is increased till it equals in quality the land which we distinguish by the term fresh, or which has never lost any of its fertility by improper treatment. It should be the object of every farmer, who wishes to derive any benefit from his farm, to improve the land till it shall have acquired this degree of richness.

Persons who have not given due attention to this subject, as many have not, will be surprised to find that this plan not only increases, but infinitely improves the stock. Sheep fed on land in good condition, newly sown with grass seeds, and afterwards

with turnips, at the proper season, will be preserved from disorder; but when fed on old, worn-out land, producing unwholesome herbage, they will lose their condition; and when afterwards put to turnips, or better food, they are often attacked by disorders in the spring, which will produce a great mortality among them; this was the case last spring in those parts of the Wolds where the sheep are kept in this poor way during winter, till the approach of spring, and then put to turnips. The blackwater, which often proves mortal, will about Michaelmas attack those lambs not put to clover, grass seeds, or some wholesome herbage, when taken from the ewes.

This might be prevented entirely, would farmers make turnips and grass seeds more their object; and abating their avidity for corn, be satisfied with one crop, instead of three; this, I can affirm, would be most profitable in the event.

I hope I shall not incur the imputation of vanity in adducing an example in point, executed agreeable to my orders, from the opportunity I recently had of noticing the improper and unprofitable management of the land on the Wolds. I mention it merely as an illustration, not only of what is here said, but also of what is alluded to under the respective heads of inclosure and population.

The township of Hunmanby consists mostly of open fields and commons. The arable land was worn out to such a degree, by crops injudiciously repeated, that it returned little more corn than was necessary for seed and the support of the numerous horses employed in cultivating the soil. The sheep also suffered from the mismanagement above described; and poverty was the inmate of every dwelling, though several of the occupiers were owners also.

The difficulty of introducing a reformed mode of cultivation in a township prejudiced in favour of old customs, and fearful lest every innovation should prove ruinous, was great, and not easily surmounted. After many meetings, and much temporizing, I prevailed upon them, however, partially to adopt my plan, but not without an express stipulation on their part for one crop of corn more than I had intended. I was glad to recede a little

rather than lose the whole; the following mode of husbandry was adopted for the open fields in six divisions.

1. Turnips, sown on a good fallow, hoed and fed off with the sheep of the occupiers.
2. Barley, with seeds.
3. Seeds.
4. Ditto.
5. Wheat.
6. Oats, or pease.

It was my wish that the crops of oats or pease should have been entirely omitted, and that the land sown with seeds should have continued in grass three years.

The grass seeds are sown (with the barley), and are all of one quality, and paid for proportionably by the occupiers, each of whom stocks them with sheep according to his proportion of the land sown.

The shepherds take care of the sheep, and fold them each night upon the seeds alternately, so that the land of every one receives equal benefit. Their wages are paid, and the nets or hurdles furnished by the several occupiers according to their respective proportions.

Field reeves or masters are appointed, to give the necessary orders, to inspect and regulate the sowing of the seeds; and the conduct of the shepherds, and to take care that the several rules and orders are observed. The sheep are turned into the divisions sown with seeds, on a certain day previously agreed upon at a meeting of the field reeves and proprietors.

Thus an open field is enjoyed in as beneficial a manner, as if it were inclosed, and by a diminution of the arable part, it is put under that course of husbandry which will tend to invigorate and preserve it; the herbage is increased, and the stock more numerous, and of a superior quality: a greater quantity of better corn is also produced by one-third of the seed and labour, the part still kept under the plough is also worked with less trouble than formerly, for fresh land in good condition has always this advantage over that which is foul and exhausted. Another benefit also attends this mode of management; two persons are fully sufficient to attend the sheep stock, whereas were the lands in-

closed, this stock would be divided into several parcels, and require in consequence of such division very expensive, as well as inconvenient attendance. The precarious rearing of fences also in this exposed situation is avoided, and the immense expence of continually repairing them is saved.

The advantages to the occupier are, that his arrears are paid off, his stock is increased in quantity and quality, his land in condition, and his mind is relieved from the anxiety attendant on poverty and bad management. The owner of this estate, much to his honour, has permitted the tenants thus to recruit themselves, without sharing in their advantages. This example is worthy of imitation; for most plans are at first attended with inconvenience, though perhaps eventually beneficial.

Hence it appears experimentally, that the Yorkshire Wolds, and all land of a similar quality and situation, may be restored to its former vigour, and otherwise properly managed without fences; which in many places it is a force on nature to attempt. There are other places, however, where fences are absolutely necessary, and where by suitable attention they may be raised: there are even few townships where, in some parts, this is not practicable; which parts are generally adjoining the town, and should be so inclosed as to form separate accommodations, the more distant for milch cows, the nearest for draft cattle.

The remainder of the land in the township should be exchanged and flatted, so that the scattered property in the open fields might be laid together in flats, and managed agreeably to the foregoing plan, with such variation as situation and circumstances might point out.

The aid of parliament would in some cases be requisite to confirm the exchanges, and to render the plan permanent. The above arrangement was made under the sanction of the thirteenth Geo. III. cap. 81; intituled, "An act for the better cultivation, improvement, and regulation of the common arable fields, wastes, and commons in this kingdom."

This act, if attended to, would be of real service, and should be revised, amended, and enforced.

A considerable quantity of land upon the Wolds is sown with sainfoin, which is very useful. This requires land in complete order; it should be sown without corn, in rows of about one foot asunder; and may be very advantageously hoed for the first two or three years. The seeds used in laying down land to grass, are white clover, trefoil, rib grass, and hay-seeds.

In respect to rye grass, opinions differ concerning the benefit or detriment resulting from it. The ridiculous notions that rye-grass causes quick or couch grass, that it absolutely changes to that plant in time, and that it is a great impoverisher of the land, are founded on the similar appearance of the roots of each grass: when the ground which has been sown with rye grass, and infected with couch, is broken up, the roots of each being very much alike, they are indiscriminately deemed the same, although a very short time and observation will prove them to be wholly different, for the rye grass will decay, and the couch will remain.

Rye grass is certainly very beneficial, particularly when sown on land of a thin staple in exposed situations, or for a supply of grass in the spring on land of every description. Its quick and early growth soon brings it to maturity, when, like all other plants, it will exhaust the land, if not prevented by an early attention to feed it down, and check its luxuriance; few plants are less injured by the feeding of cattle, horses, or sheep; and horses will perform their work better when fed on it, than on any other. It is to no purpose to sow land not in condition; this attention is even more material than the choice of seed. It is also essential to sow the seed while the land is fresh harrowed, and to cover it sufficiently, but not too deep; for want of these attentions, the seed has often perished, and the loss has been attributed to its bad quality. When rye grass is to be harrowed in on wheat in the spring, the land should be well broken, until that glazed appearance shall no longer be seen, which land, that has lain some time unbroken, generally puts on. It often happens, however, that the farmer, not sufficiently

acquainted with the article, or for the sake of saving a few pounds, purchases seed of a bad quality. The first is to be pitied, because he neglected applying to some skilful person for his assistance; the other meets his desert in his loss, although he may profit by it in future, and behave with greater liberality even to himself. The seedsmen follow a very injurious practice of mixing good and ordinary seed together to suit the article to a certain price, the consequence is, that the greater part of the seed will not grow; yet the difference cannot be discovered, even by a good judge without close inspection.

The time of sowing is nearly the same in the high as in the low parts of the district: beans and pease are sown from the latter end of February to the middle of March; oats from the beginning of March to the middle of April. Potatoes are planted, and barley and flax sown from the latter end of March to the latter end of April; mustard in May; turnips from the middle of May to the beginning of July; rape, if for seed, in August; wheat and rye from the middle of September to the middle of November. Harvest begins about the 15th of August, and ends about the latter end of September, except for beans, which are generally later.

The harvest on the Wolds is about a week or ten days later; this division is considerably elevated, yet the harvest is not so late here as on the neighbouring Yorkshire moors not much more elevated; for the soil of the first is dry, and the air in course warmer; the latter abounds with various bogs and swamps where the soil is generally coarse and moist, and the air dense and cold. The precise time of sowing is governed much by opinion, or the nature of the land. Indolence also sometimes creates delay. It is highly proper to take the earliest opportunity to sow wheat upon wet lands, not only on account of securing the season, but when sown at this time, it generally succeeds best. It is also best to sow wheat early on a clover or grass ley of two years. The warmth of the weather, with the dry state of the land, destroys the grass roots and turf more rapidly; the roots of the wheat also branch more before winter. In respect to spring sowing, all free and dry soils, and those in high condition should be sown the ear-

liest, and those upon an exposed situation, or in a poor and wet soil, should be sown the latest.

One attempt only (as I can find), has been made to water meadows; it was not prosecuted with much attention, but will be revived, and some more experiments will, as I believe, be made. The springs from the Wold hills seem to favour the design; there are also opportunities of flooding large tracts of land in some parts of the lower countries, by placing cloughs or sluices across the drains. This in dry seasons would be attended with the beneficial effect of enriching the land. It would also be advantageous to form ponds in high lands, for the purpose of watering such lands, whether meadow or pasture.

The system of paring and burning is much practised, and with advantage on strong coarse land, or even upon thinner soils covered with coarse or thick turf, for it certainly brings land more quickly into a vegetative state. The prejudice which some persons have conceived against this mode of cultivation is founded on the abuse of it; for it has often happened in cases where the occupier has had full liberty, that either through interest or ignorance, he has drawn so many crops from the land as to deprive it of every vegetative principle. I need not ask the question,—in what condition land of a thin staple must be left, after one crop of rape, and two or three of corn shall have been taken from it? according to the common practice. If the crops shall be taken proportionably to the goodness of the land, and a suitable supply of manure shall be afterwards given it, the system of paring and burning in this case may be allowed, and is, as I said before, a ready and profitable method of putting strong soils, or even lands of a thinner staple, into good order.

The farms in so considerable a district as I have before mentioned vary in size; and it is proper that it should be so, for thus families, possessing various degrees of property, are accommodated: but I think a monopoly of farms should be checked; for that depopulates the country, to the great injury of agriculture, manufactures, and trade. The very large farms also should be reduced in size, except where they are calculated for

sheep, as on poor soils and dry extensive heaths, in which case it is absolutely necessary that the farm should be large; for not to mention the idea, that the same shepherd can as easily attend five hundred as one hundred sheep, the farm cannot be so profitably cultivated in any other mode; small inclosures also, and subdivisions, are not compatible with farms of this extent.

Proper attention is not in general paid to the accommodation of labourers, with land for a cow and potatoes, which so highly contributes to their comfort, and enables them to bring up and support their children: when a labourer cannot afford to purchase a cow, it would be both politic and humane in the farmer to let out one to him.

Stock.——A great number of sheep are kept upon the Wolds, and in other parts of this district; most of which are of the long-woolled kind; the breed is a mixture of the old Wold sort and the Lincolnshire, and of late has a cross of the Leicestershire. Some townships upon the Wolds still retain a smaller sort, with a finer and shorter wool, occasioned rather by the scanty pasture, than introduced and kept up by the choice of the farmers, who generally use a long-woolled ram. Three year old wethers of the first kind when fat, weigh from twenty-four to thirty pounds, and the ewes from sixteen to twenty-two pounds per quarter.

The fleeces of the ewes, wethers, hogs, or hoggits, will, upon an average, weigh from eight to ten pounds. Wethers of the second kind when fat, will weigh at the same age from sixteen to twenty pounds, the ewes from twelve to sixteen pounds per quarter. The fleeces of the wethers, ewes, hogs, or hoggits, upon an average, will weigh from four pounds to six; a stone of wool in this district weighs sixteen pound.

Different opinions are entertained as to the best kind of sheep: some insist that the bony kind with heavy fleeces, like those in Lincolnshire, are the best for this district: others think the slight boned, finer kind, with thinner fleeces, originally from Leicestershire, are more suitable: others hold that the first, with a cross of the last, is better than either.

In the lower parts of the district, which are not so much exposed to cold as the Wolds, sheep are bred and fed: and as speedy fatting is here the principal object, I think the Leicestershire breed with a slight cross of the Lincolnshire, is to be preferred, and a thick coat not being so necessary here as in colder situations, the wool will increase in length, and grow coarser: on the other hand, I think the Lincolnshire, with a cross or two of the Leicestershire breed, should prevail on the Wolds, this might at the same time decrease the bone, and increase the tendency to fat. In this situation, the size will decrease, and the coat become shorter and finer. In breeding this animal, a defence for it against the cold should be provided by augmenting the quantity of its wool, but never so much as to make the owner inattentive to the fineness of the fleece. The difference in point of value, between a fine and coarse fleece is considerable indeed in the scale of the farmer's profits, it is also of great and essential consequence to the manufacturer.

The sheep on the Wolds are bought in great quantities, to be fatted with turnips in the manufacturing parts of the West Riding, where large mutton is preferred on account of the great number of persons frequently in a family; for this reason, and more especially as the sheep are kept to a greater age than elsewhere, a larger, and a more growing breed should be preferred.

Great expence and pains are bestowed by many, in their endeavours to concentrate every good quality observed in the species, in one breed, in order to bring this useful animal to a state of perfection, and these endeavours prosecuted with skill, attention, and preseverance, may undoubtedly be attended with the desired success; but to whatever perfection sheep may be brought, this perfection can only be preserved by the proper preparation and good condition of the land, and a regular and due attention to their food. Few animals are sooner or more affected by climate, situation, and food, than sheep.

A great number of cattle and horses are bred in almost every part of the Riding, and in course are of great importance. The cattle are of the short horned kind: the oxen at a proper age, and fatted, weigh when killed from sixty to one hundred and ten

stone (at the rate of fourteen pounds to the stone); cows weigh from forty to sixty stone (the average of oxen weighs seventy, of cows forty-eight stone). Those of the greatest size are bred in the eastern part of the Riding.

A great improvement might be made in this breed, by the introduction of bulls less coarse, rather thinner boned, and more of a feeding kind. The horses are generally stout, for the light or bay kind, and are equal if not superior, particularly those upon the Wolds and the eastern division, to any others in Yorkshire. Great attention is paid in breeding them, particularly to the stallion; but much to the injury and loss of the breeder, most of the best mares are sent out of the Riding, as more saleable. This œconomy is delusive; some see the folly of it, and act differently; and the rest no doubt will follow the example. Although a considerable degree of the racing blood is introduced into this breed, yet both the largest coach, and smallest saddle horses are produced in this Riding.

No horses are better calculated for the plough than this breed, their activity and quick walking give them a superiority over the slow black kind, excellent however for drawing heavy waggons. These two breeds should be kept distinct without any mixture of blood.

Manures.——Fold-yard and stable dung are the principal manures used.

A great quantity of dung comes from Hull, by water, to many parts of the Riding, which lie convenient to the rivers and canals. It consists of stable dung, sweepings of the streets, and ashes, and is delivered on board at the rate of four shillings for a good cart load. It costs the farmer from five to seven shillings per cart load, according to the distance. A great quantity of soot and pigeons' dung is also used, with some rape dust; but the price of the latter is become so very high, that less is now used than formerly. These are generally spread upon the surface by hand. It would be more beneficial to incorporate them with earth, for which purpose a square bed or couch should be made of earth, on which a layer of pigeons' dung, or soot, should be laid four times the thickness of the earth. The whole should be

afterwards turned and spread on the land out of a light cart, which may be made for the purpose.

Some are in the practice of turning their dung in the fold-yard, and when it has nearly done fermenting, and is almost rotten, they lay it upon the land. If it should be too dry, a little water may be added; and they suppose that in this state it has a greater effect; of which I have no doubt, having found it to answer better than that which had not been turned.

In most parts of the Riding, the manure is spread in a very slovenly manner, as it is not broken small enough, nor does the farmer pay a proper attention to plough it into the land immediately, which is a matter of greater consequence than many farmers apprehend. A ridiculous custom prevails, in most parts, of spreading it out of the waggons, by which the team is unnecessarily delayed, when a light cart would answer the purpose much better, by dropping it in small heaps, which might afterwards be spread by hand, without the attendance of the draught cattle. Lime is a manure much used on the Wolds; the average price of it per chaldron, of 32 bushels, costs as under:

	s.	d.
Chalk lime of the Wolds - -	8	6
Lime near Malton - -	7	6

Lime of an excellent quality, from Knottingley and Brotherton, 12*s.* 6*d.* per dozen, equal to a chaldron of 36 bushels—This supplies, by the convenience of water carriage, the lower parts of the Riding. Seldom more than three dozen of the Knottingley or Brotherton lime are laid upon an acre, but often only two. Of the other sorts from three to five, but generally four.

It is a slovenly practice adopted by many, to lay the lime upon the land in small heaps, and keep it in that state till by heavy and continued rains it not only falls, but is absolutely reduced to a mere paste; in such condition it is of little use to the land; and it is better to lay it in heaps of a load each, even for those who are properly attentive, and spread it by the means of a small cart. It is of great importance that lime should be mixed in the ground when it is just falling; the land should be then harrowed first, and ploughed immediately afterwards; the farmer should not

permit any lime to be left spread even one night, without either harrowing or ploughing the land.

Sea sand is found to answer well upon strong clay; the quantity laid upon an acre is generally from 20 to 40 loads: as the land lying near the coast is chiefly of this description, this kind of manure may be used at a moderate expence: it has the strongest effect when laid upon the fallow, as it thereby becomes more effectually mixed with the soil; the best time for using it is while it continues in a damp state.

A considerable quantity of sea-weed is often thrown on this coast; it makes an excellent manure, either when laid fresh upon the land, or after it has lain some time in a heap to promote fermentation. Some of the Wold chalk stone has been used to good effect upon strong fresh land, in the proportion of sixty tons to an acre, and is worthy of further trial. It is not improbable but it would be of service to most coarse, fresh Wold land, when first broken into moderate sized pieces.

It does not appear that there are many places where marle is found. In one or two places marle is used with good effect; every occupier of land, therefore, should be diligent in his endeavours to discover it. There are many places where the clay is of such a quality, that it would very much assist either the thin, hazle loam near it, or land worn out with too long ploughing. This work may be done when the draught cattle can be spared.

Woods.——There does not appear to be any particular mode of managing the woods. There are very few of what are called spring woods. Timber trees, except those which are within view of a house, or for ornament, are cut as best suits the fancy of the owner. Such trees as show evident signs of decay, should be cut down; it is a loss to the owner as well as to the community to let them stand, and it is equally so to cut down those of a small growth which are thriving, or in a suitable situation. It is affecting to view the waste committed on trees of both descriptions. Few are aware of the improvement which an oak of a foot in diameter will make; or how much more profitable as well as useful it would prove to

take down the old trees, and lay out the money arising from them, or a part thereof, in planting and fencing young ones.

It is of material consequence to keep cattle and sheep out of woods, even those which are full grown. All spring woods should be cut in regular falls, progressively. If even the taking down a single tree must be sometimes detrimental, how much more so must it be, and how very unsightly, to run over a wood and take out here and there a tree, or part of the spring wood, without any order or method?

An exposed situation, and a partial air, are unfavourable to all woods; and the woods require as great attention in draining and laying them dry as any other land. Many new plantations, as well as those of longer standing, are exceedingly injured for want of draining. The price of wood is a serious article to the farmer. Good oak for his purpose is sold in this Riding for two shillings or half-a-crown a foot—common ditto from one shilling to eighteen pence. Good ash wood from one shilling to eighteen pence; and common ditto from eight pence to a shilling.

Rot in Sheep.——Variety of opinions are entertained as to the cause of this disorder: some suppose that it arises from a particular kind of plant or insect, but the liver-wort is most blamed; others, that it is caused by a flush of grass after rain; most persons, that it is occasioned by low and wet land. As to the first, the all-wise Creator is too beneficent not to furnish an animal which must range for its food with sufficient instinct to avoid the plants baneful to its health. As to the flush of grass, it is not likely that a cause so temporary should have so lasting an effect; and the notion is futile, because the grounds, whereon sheep have never taken the disorder, have those flushes after rain, and often more luxuriantly than those where the sheep have been affected with this disorder. There can be no doubt but that the rot occasionally is caused by low and wet lands, but at the same time it is equally true, that many low and flat grounds are free from it; as for instance, salt marshes and warp lands in general.

Sheep naturally delight in the most airy and dry situations, as may be proved from the constant preference which they give to the

highest pastures, even in cold weather, and from the perfect health that they enjoy on soils which, free from a noxious and damp air, produce a sweet, wholesome, and nourishing herbage, such as we find, on a kind loam, with a substratum of stone or chalk, perfectly dry, on sand free from any spring near its surface, and on salt marsh and warp land made by the sea.

From the above, we may fairly conclude that the complaint of the rot must arise from pastures of an opposite nature; on which when sheep are confined, a wet or dry season will make no difference; for a thin, starved soil, situated in a close, unwholesome air, producing a coarse and crude herbage of little nourishment, and having a spring near the surface, must always occasion the rot.

Nor is this kind of land only troubled with this evil; for land also which in some degree partakes of its nature, is subject in proportion to the same mischief: this land is of three descriptions, the first contains a soil deeper and better than the last, but still having a substratum, open and full of springs. In very dry weather, this land has not a tendency to the rot, because excessive drought purifies the air, decreases the springs, and consequently dries and renders the herbage more wholesome: the second is a soil in part like the last, but interspersed here and there with wholesome spots, free from the rot; this will not injure the sheep in moderate seasons; but when hard stocked, in wet seasons, it will certainly rot them, as the sheep then will have no choice, but must feed equally on every part, whether wholesome or dangerous. The third description of land consists of a strong and rather coarse clay, or hazle loam, free from springs; on this land sheep may feed in safety, except in excessive wet seasons, such as that in the year 1792, when this kind of earth or soil is so saturated with moisture, and retains it so long as to render the herbage unwholesome and crude, and the air humid and unsalutary.

This disorder appears to me to be merely a consumption, proceeding from the causes above mentioned.

Prevention appears to be better than remedy; and the health of the sheep might be always secured by the farmer's *suiting the*

stock to the land: I trust, therefore, the above observations will be of some use.

I should be sorry, however, to discourage any person from attempting the cure in any other way; though various unsuccessful trials have been made.

A gentleman of the faculty in this Riding has been laudably endeavouring to investigate the subject; and from his good sense, skill, and attention, there may be reason to hope for his success. I apprehend he will lay the result before the Board of Agriculture.

Leases.——Very few leases are granted in this district; many tenants being even without a written agreement. The granting of leases, it must be confessed, is a circumstance that requires deep and serious consideration and reflection; some landlords, however, are candid enough to grant them. Leases are proper and safe to be granted, when they contain covenants for a mode of husbandry suitable to the demised farm, and affording the tenant a free scope for his skill and abilities in pursuing a stipulated system of husbandry, advantageous to his own interest, and consequently to the improvement of the farm. This system should be composed and drawn out by a person completely skilled in agriculture.

As little obligation as possible should be between the landlord and his tenant; the improvements of a permanent nature should be made at the landlord's expence; and the tenant should pay interest, and what is reasonable over and above for the money laid out in main and under drains, new fences, roads, and bridges: and if a tenant who shall agree to, and actually enter on a farm out of condition, should quit it before he shall have been repaid the expence of improving it, tho landlord himself, or the succeeding tenant, should reimburse him his expences; and the landlord should agree to such repayment, before the entry of the tenant undertaking to improve his farm.

If neither leases be granted, nor a condition similar to the above be stipulated, it cannot be expected that agriculture will be carried to the perfection it might be, at least on the farms of

many landlords. There are, however, several farms in the district without either lease or agreement, in which the tenants may be secure during the lives of their landlords; but when a tenant enters upon a farm out of condition, and pursues a true and spirited mode of husbandry, the advantages arising from the term of one life are not sufficient to reward him. The putting an ill-conditioned farm into complete order, is attended with a greater expence, and requires more skill and attention than many are aware of.

The common place covenants every attorney's clerk knows: those which regard the mode of husbandry depend upon variety of circumstances, viz. the nature of the owner's interest in the estate, the nature and situation of the land,—the length of the term, and present condition of the farm; so that general covenants cannot be given: but when the circumstances are known, I do not doubt the possibility of devising such covenants for any farm as would be satisfactory to both parties.

Manufacture and Commerce.——The only manufacture in this Riding of any consequence is at Wandsford, for carpets, and spinning cotton: this is very beneficial to the neighbourhood, from the considerable quantities of coarse wool worked up. In point of trade, Hull, from its situation, is the emporium not only to this Riding, but to this and many other counties; and very extensive business is carried on there, which renders it of great importance to the agriculture of this country, both on account of the internal consumption, and the exportation of its produce, particularly horses; a great number of which, as well as of cattle, are sent to Russia.

The market towns at present are most of them well supported by the consumption of the inhabitants of the Riding, and I trust will hereafter be more so.

Trade is supported in a great measure by the number and comfortable situation of the inhabitants of a country—an extended cultivation, with rural economy, will increase it to a degree of opulence.

Societies: Disposition for Improvements, Impediments to them.——In September, there is a show at Driffield of rams, bulls, boars, and heifers, and premiums are given to the best; which excites an emulation, and not only considerably promotes the improvement of the breed of stock, but affords the uninformed an opportunity of seeing such as are deemed good, and of hearing the sentiments of men eminent in the line of breeding: it might not be amiss to add to the premium for the best brood mare; another for the best five ewes: this is the only society established in this Riding: there is another in contemplation, which may prove useful. A tax upon rams, bulls, and stallions, would have a good effect, by preventing the use of bad ones, as the owners would not find them worth paying for. I am confident, if proper encouragement were given to persons possessed of property in this district, to adopt improvements in agriculture, they would cheerfully embrace the opportunity, as they possess a spirit for carrying them into execution.

Tithes, in the opinion of many, are considered as one great obstacle to the improvement of agriculture in this Riding: to discuss this subject would take more time than the Report will allow; and it might appear presumptuous to offer my sentiments at large on so popular and important a subject. No doubt, many real and imaginary obstacles might be done away, if a separation of the respective interests of the landlord and tithe-owner could be effected; but though I am inclined to think this finally practicable, yet I am persuaded, that a circumstance of such great magnitude will require a very serious investigation, and considerable length of time before it can be carried into effect. A second great and real obstacle arises from the want of a proper confidence between the landlord and the tenant, which if not by some means established, agriculture probably will never flourish to that degree required. A third impediment results from the ignorance in agriculture of gentlemen of landed property, who do not sufficiently qualify themselves either to superintend their own estates personally, or to enable them to select persons of sufficient skill and experience in husbandry, of general information, candour,

discernment, and activity, to whom the care of their estates can be entrusted: such a man will readily discover the condition of each farm, with the disposition of each farmer; he will be able also to advise with and assist the weak, stimulate the indolent, and check the licentious; but, alas, to what unskilful and inefficient characters is this important trust too frequently committed?

On the part of the tenant also there are many obstacles to improvement; such as not exercising his mind in the due contemplation of nature, to discover the causes of what he sees—the study would be both pleasant and useful in his solitary hours, for he would then be more clearly convinced of the necessity of draining, and paying proper attention to the regular feeding of stock, working of draught cattle, &c.

Every farmer should so arrange the plan of his work, that it may proceed gradually and without confusion, that a proper attention and force may be given to every part of it. This conduct will render every farmer master of his time; so that every thing required to be done will be performed in time, not delayed till the season and opportunity shall have been lost. The impediments arising from rainy days, sick servants, from the occasional and necessary absence of the master, &c. will in this case be of little consequence, nor embarrass the operations of the farm, nor prevent the occupier from attending to the smallest concerns of it, that are of very material consequence, *in every view* of which that keeping the farmer at home is not the least. I have pleasure in observing, however, that several in the district are sensible of the advantage resulting from the above conduct, and pursue it so much themselves in their cultivation, as to render my remarks unnecessary for their guidance.

AINSTY OF YORK.

The Ainsty of the city of York, is a small district extending westward from York; it is bounded by the river Ouse on the north-east, the river Wharf on the south-west, and the river Nidd on the north-east. The situation of the Ainsty is equally as advantageous as any in the East Riding for sending its produce to the different markets by the rivers Ouse and Wharf; a great part of the produce is carried to the populous city of York, conveniently situated for that purpose; a considerable quantity of corn also is sent to the West Riding, which lies more convenient for that purpose than the East; the price of corn and other produce is therefore higher here than in the East Riding.

The country is in general flat, with some gentle swells. The quantity of wood is considerable; chiefly scattered, or in hedge rows. The soil in most parts consists of a thin sandy loam, or of a very strong clay loam, with the several intermediate varieties, but very seldom, if ever, on a stony bottom. A few open townships only remain in the Ainsty; a considerable part is ancient inclosure, and several recent inclosures have been made. The farms are in general small, few exceed two hundred acres; they contain an equal proportion of arable and grass land. The same modes of husbandry, according to the difference and quality of the soil, are practised here as in the East Riding. They breed some good horses, but not many cattle, and very few sheep; the breed of the latter is in general ordinary.

There are no manufactures either here or even in York, of extent sufficient to affect agriculture.

The same observations that have been made upon roads and drains in the East Riding, will attach here; the repetition would therefore be superfluous. In short, the Ainsty is similar in most respects to the East Riding; they are divided only by the river Ouse.

To conclude.——The science of agriculture is noble and important, requiring the exertions of ability and experience to conduct it with propriety: it is not that degrading or despicable subject too many weakly imagine: it has been for some time emerging from the darkness of ignorance: the Honourable Board of Agriculture, lately instituted, will essentially improve and re-animate this science, by diffusing the light of a refined cultivation: the opulence of the nation will be augmented, and the people rendered more industrious and happy: the full increase of the earth will be obtained upon permanent, secure, and undeviating principles, generally diffused and understood. Should the foregoing hints prove acceptable to that Honourable Board, and of the least utility in promoting their designs, the writer of this Report will experience a very particular and genuine satisfaction.

ISAAC LEATHAM.

Barton,
March 1, 1794.

REFERENCES TO THE ANNEXED PLANS.

PLATE I.

1. Causeway, 12 feet wide.
2. Road into the fold-yard.
3. Fold-yard.
4. Slaughter house.
5. Hen house.
6. Pigstics.
7. Goose and duck house.
8. Water.
9. Pump.
10. Poultry-yard.
11. Waggon helm, or shed.
12. Oven.
13 13. Gates.
14. Dove cote.

PLATE II.

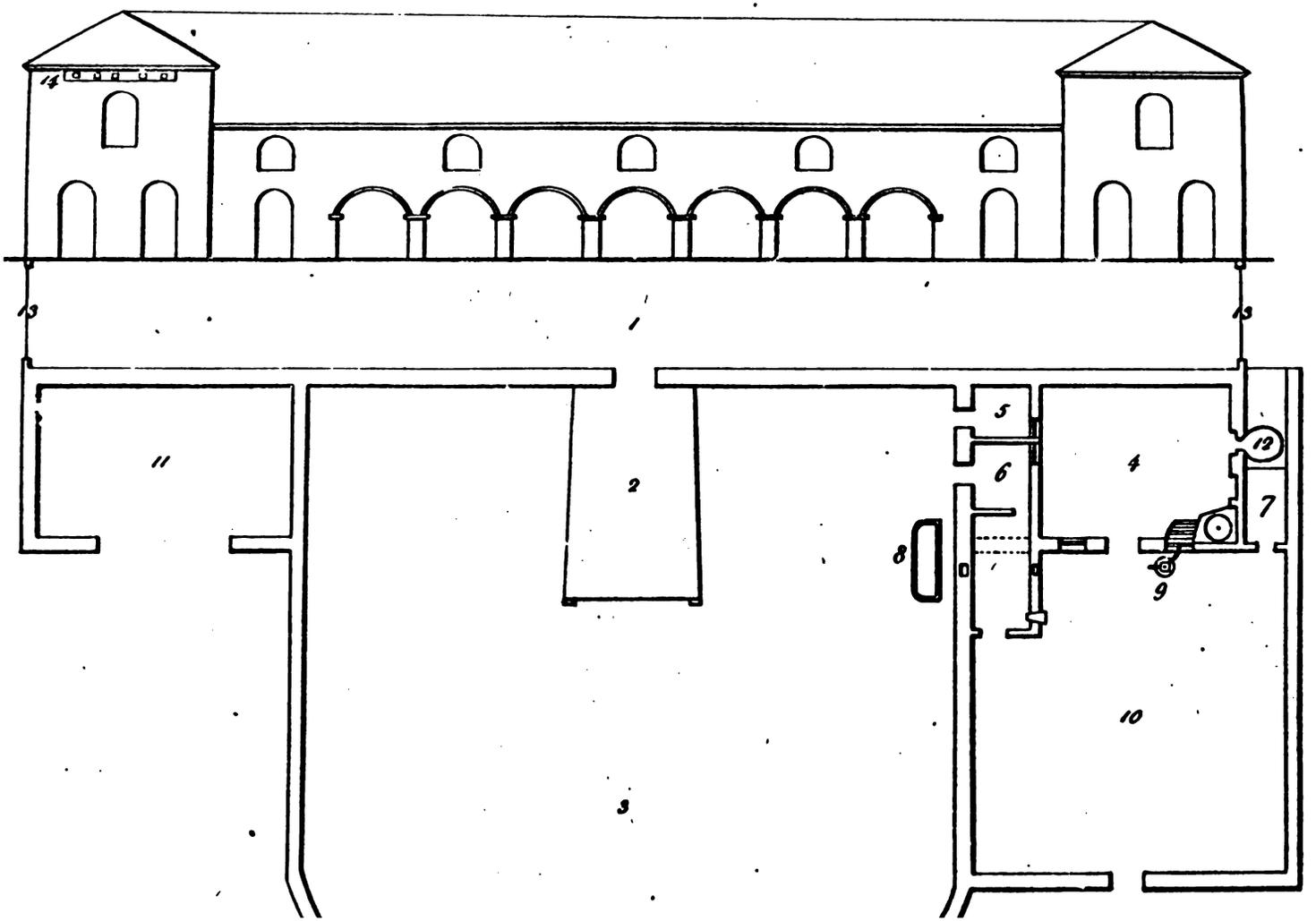
1. An open stall.
2 2. Five-stall stable.
3. A boarded threshing floor.
4. A vault below, 21 feet long, 9 feet wide, and 8 feet high.
5 5. A house for the calves and foals.
6. A cattle house for 20 head of cattle.
7. A gang-way to feed the cattle from.

PLATE III.

1 1. A loft over the stable.
2. Granary over the cattle shed.

PLATE IV.

1. For ox-houses, not yet built.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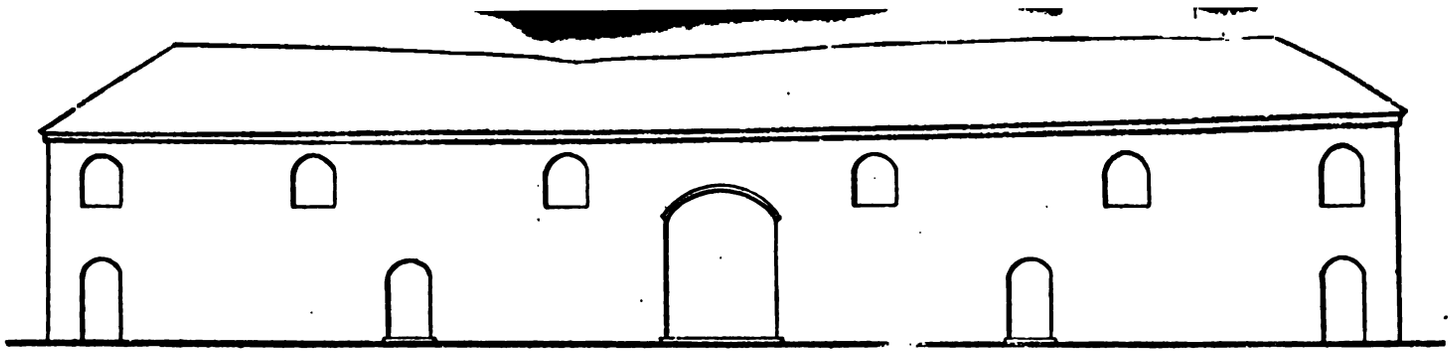
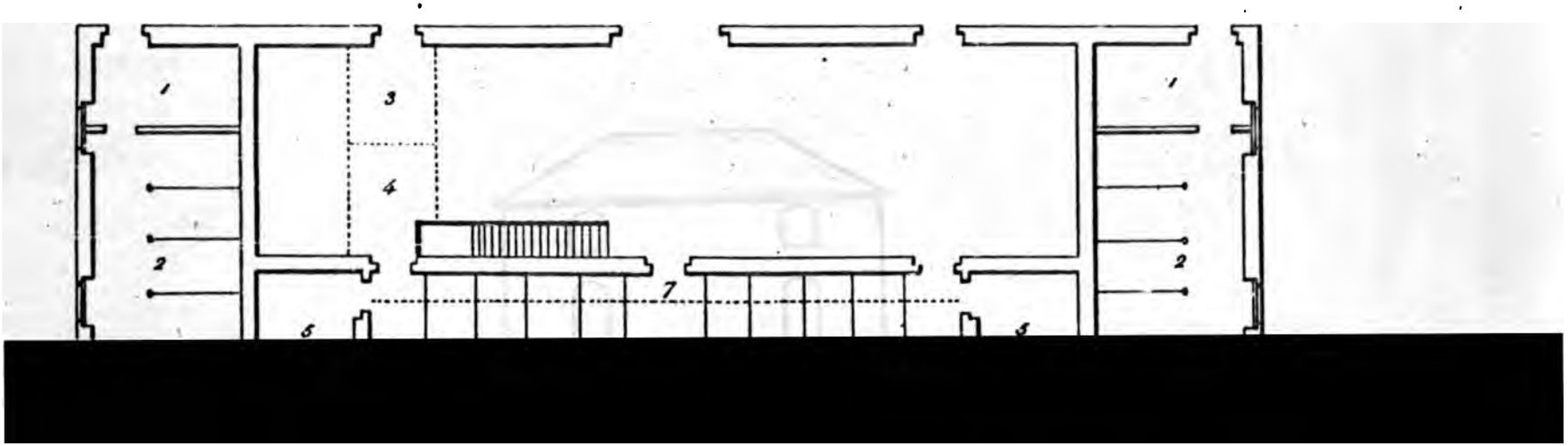
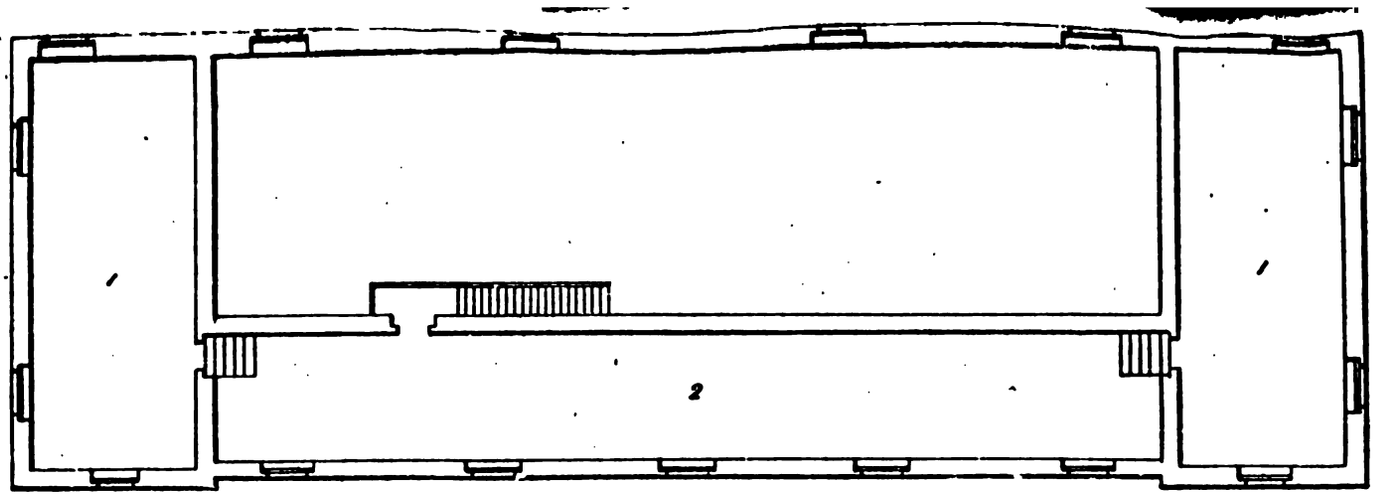


Plan of Barn Floor, laid with Flaggs.

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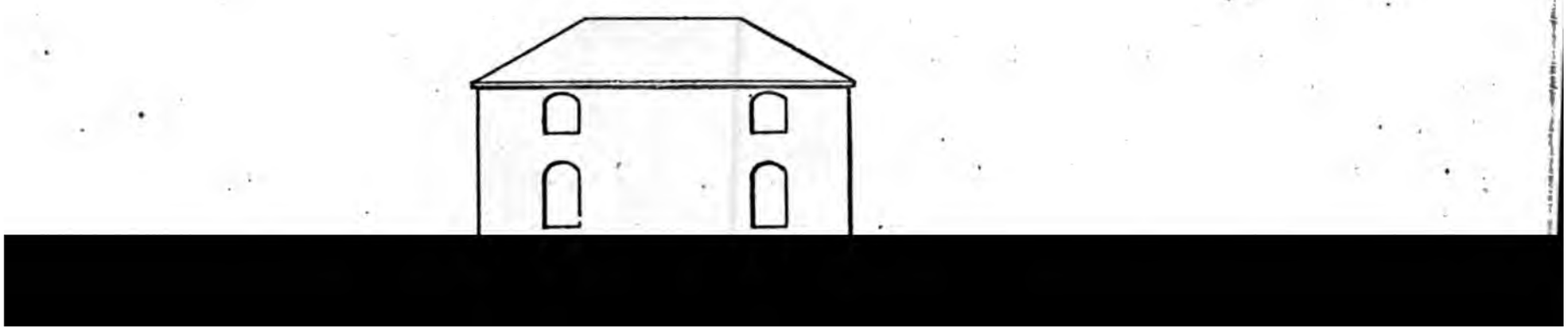
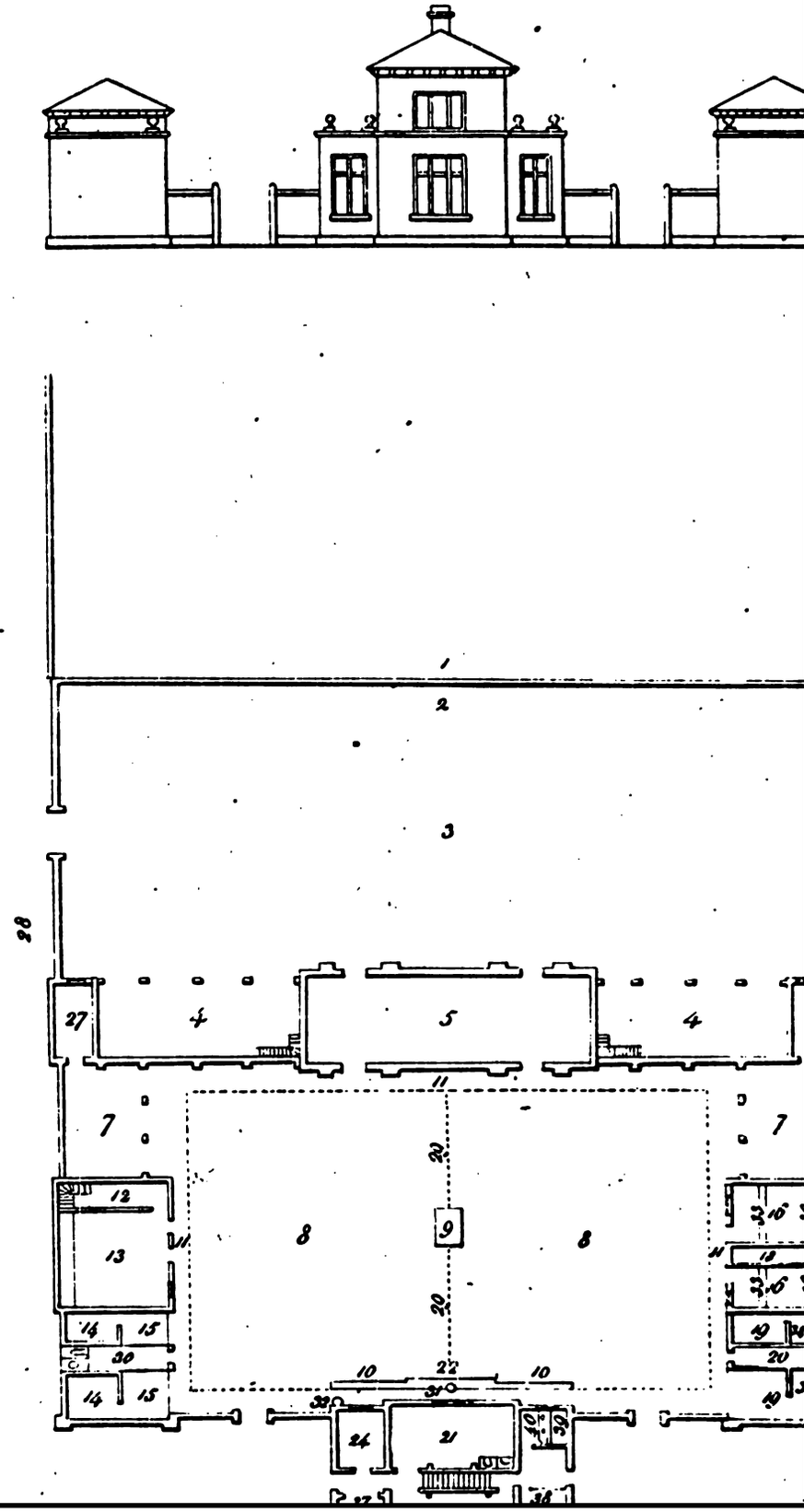
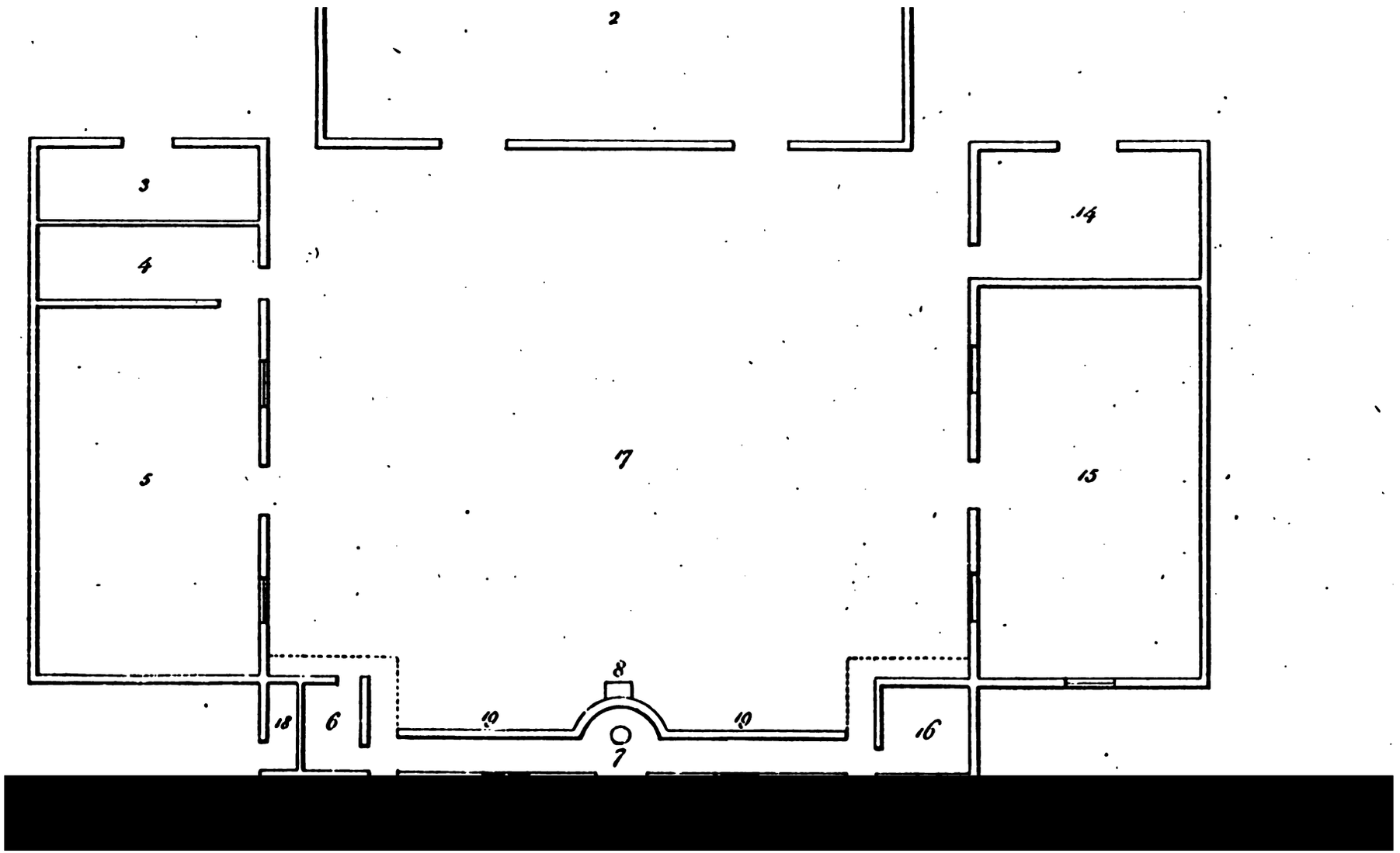


South Elevation of the Farming Mans House, & part of the Farm B

belonging to a Gentleman, situate in the East-riding, Yorkshire.

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2. Hay, &c. for feeding the oxen in the stalls.

3. Stack-yard: the corn is taken into the barn on this side, and delivered out when threshed on the other side, into the fold-yard.

4 4. Shed for carts, waggons, ploughs, &c. A granary extends over it the whole length, where the corn, when taken from the barn, is put by a small crane, which is convenient, and saves much trouble.

5. Barn, with two threshing floors about 70 feet long by 23 feet wide, and 20 feet high.

6. Hen houses, and for the poultry in the yard.

7 7. Open sheds for cattle to run under, in this part of the fold.

8 8. Fold-yard.

9. Receiver for draining the yard.

10 10. Troughs. The pigs that run in the yard are fed from these troughs by the pump, they are all covered, and with divisions like the troughs in the feeding sty.

Remark. The pigs are fed from the kitchen without going into the sty, and the troughs are so secured that the meat cannot be wasted or spoiled by the rain. There is also a contrivance to prevent one pig from driving away the rest, or getting the best of the food, every pig feeding alone. The feeding places are flagged, which keeps them very clean.

11 11 11. Causeway round the yard.

12. Harness room.

13. Stable for 8 horses, chamber above, the hay taken in on the road side.

14 14. Sty for six pigs.

15 15. Feeding place, open, for pigs.

16 16. Cow-houses for 4 cows; hay loft above.

Remark. In the cow-house, the cows are fed from the fotherer, and the hay is put into their racks from the chamber above. There is a deep trench, 33 33, at the cows' feet, which receives their dung, and keeps them

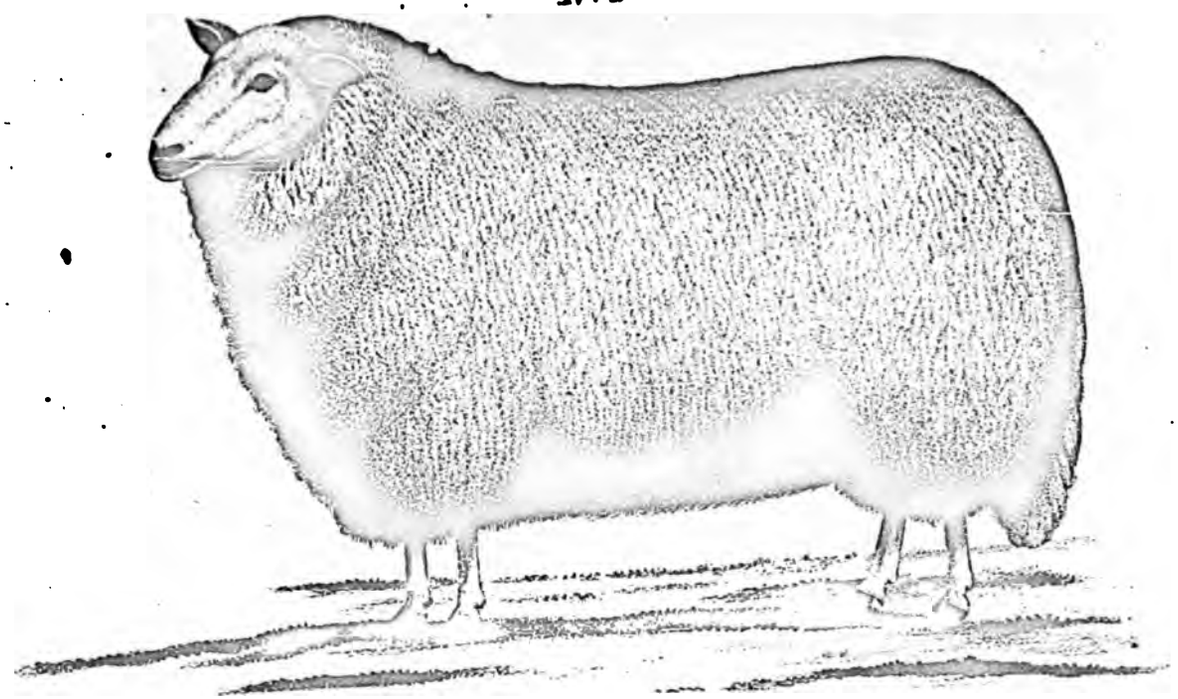
very clean. The old milk is poured from the dairy into a covered tub which stands in the small inclosed passage near the pump.

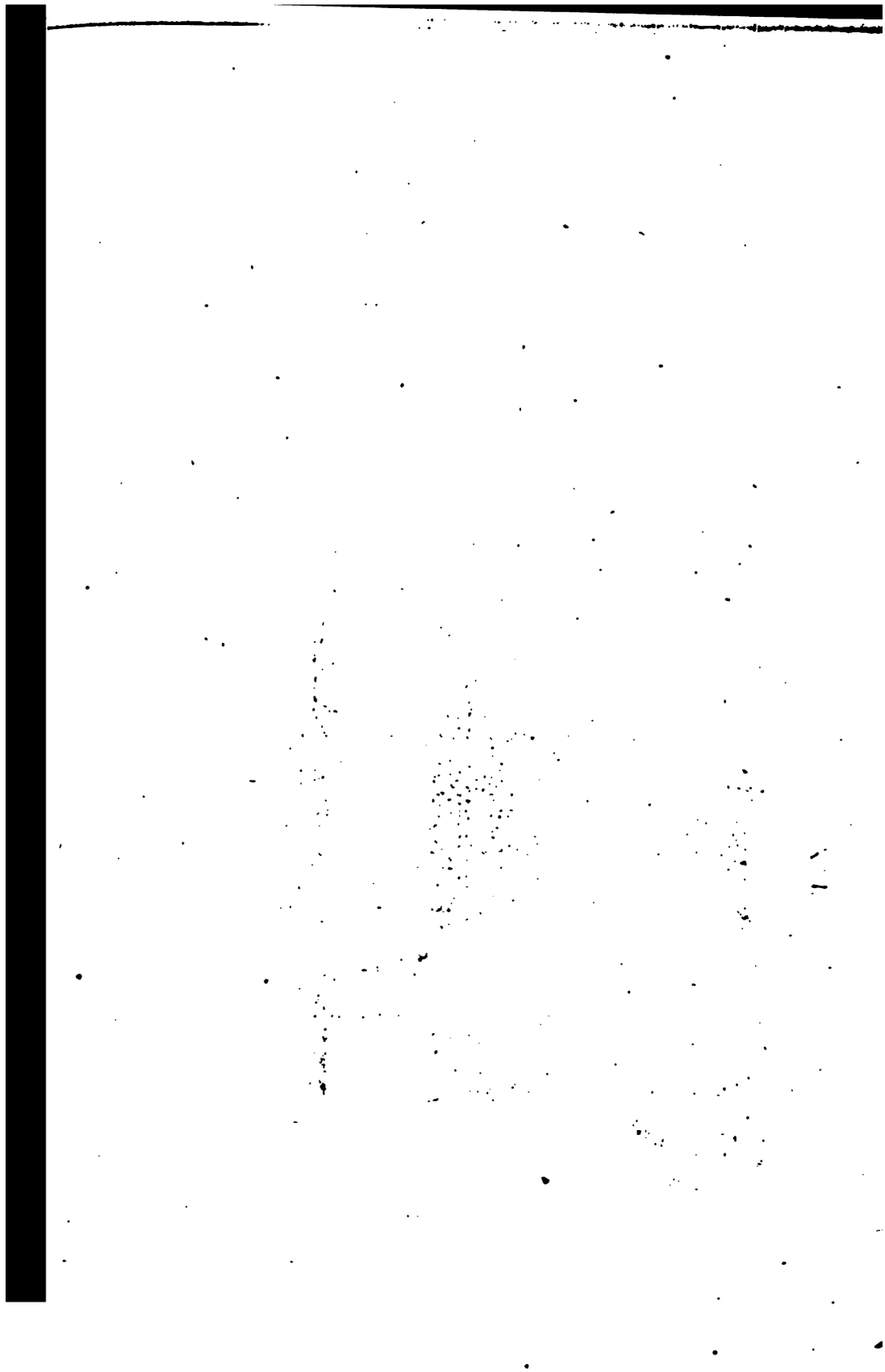
17. Passage for foddering.
18. Potatoe or turnip house.
19 19. Poultry yard, open.
20. Calf house.
21. Back kitchen.
22. Water trough.
23. Kitchen.
24. Dairy.
25. Meal room.
26. Pantry.
27. Sty, or for a foal.
28 28. Road.
29 29. Rail to divide the fold-yard.
30. Pigs' kitchen.
31. Pump.
32. Pigs' meat.
33 33. Troughs for cow dung.
34 34. Poultry place.
35. Chicken coops.
36 36. Cow racks.
37. Open shed.
38. Coal house, open.
39. Ash house, open.
40. Necessary.

PLATE V.

1. Stack yard.
2. Barn, with two floors.
3. For tools and utensils, and carpenter's work shop.
4. For foals or a sick horse, with a granary over it.
5. Stable, no granary over it.
6. Calf house.
7. Pump.

N° 2





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8. Watering trough.
9. Pantry.
10. Dairy.
11. Back kitchen.
12. Fore kitchen.
13. Parlour.
14. Waggon house, granary over it.
15. Beast house, no granary over it.
16. Pigsty.
17. Fold-yard, to be concave.
18. Necessary.
19 19. Fence wall.

PLATE VI.

The ewe No. I. and the ram, No. II. of which the annexed are portraits, are my property, and were originally a mixture of the Yorkshire Wolds, and Lincolnshire breed, since crossed frequently with other breeds; first slightly with the Teesewater, and since, very often with Mr. Bakewell's best produce, and with Mr. Cully's rams, bred from Yorkshire ewes of the first estimation; great care has been taken to supply, on each change, what appeared defective, either in skin or carcass, by which means the very best qualities of a sheep are combined in this ewe and ram.

I have before observed, that feeding makes a very material difference in the appearance of sheep; it may not be improper to add, that these were bred and kept on land of a moderate quality, exposed to the north, and of a medium elevation, between the flatter land and the Wolds of Yorkshire. Their food is only grass and turnips, without corn or oil-cake, which they never taste. The various means of increasing the size of sheep, especially of the ram, are allowable where sheep are fatted to be afterwards exhibited as subjects of curiosity; for no utility can be derived from the practice, nor can it alter the qualities of sheep, or produce any real improvements in the form; on the contrary they are injurious; for many breeders who have not skill to discern a forced appearance, hire or buy, as they suppose, a

good sheep, and are very much surprised and deceived, when they see this sheep divested of fat, and scarcely possessed of one good quality. Some allege that, as fatting is the ultimate intention, the feeding of sheep in the highest manner, is the best way to discover those most inclined to fat. But it must be allowed, that this disposition may be discovered equally as well by the usual way of feeding, a more certain criterion of judgment: when sheep become fatter than common in the usual way of feeding, it is more consonant to nature, and gives every reason to believe, that those bred from them will have the same tendency.

When sheep are kept in this manner, a great size must not be expected, this depends so much on the suitable quality of the land, and the propriety of the food. Form, and the following essential qualities, are the most material; and sheep like those of which a drawing is annexed to this Report, seem, all things considered, best adapted to the East Riding. The leg is fine, clean, and rather small; the head is small and fine, and the breast is broad and prominent; the ribs are round and full, as well as the hips, which gently taper to the leg; the rump is full, the loin is broad and full, the back continues almost of the same breadth to the neck, and preserves a fullness throughout.

The wool is long and fine, with a gentle twist or curl, rather close but free; white, and in flakes when opened, extending to the knee and hock, and full to the eye in every part. The whole form is elegant.

The ewes of this breed at three years old, weigh from 20 to 24 lb. per quarter, the fleece from 8 to 10 lb. The wethers, at the same age, weigh from 26 to 30 lb. per quarter, and the fleece from 11 to 13 lb.; but if kept on land of a superior quality, the fleece would increase proportionably in quantity, and the carcass in size, for the great size which we often hear mentioned, is not produced by the judgment and attention bestowed on it, but by the goodness of the food; and the breeder frequently claims a merit, for which he is principally, if not solely, indebted to the exuberance of the soil.

THE END.

GENERAL VIEW

OF THE

COUNTY OF DEV

GENERAL VIEW

OF THE

COUNTY OF DEV

WITH

OBSERVATIONS ON THE MEANS OF ITS IMPRO

BY ROBERT FRASER, A. M

DRAWN UP FOR THE CONSIDERATION OF THE BOARD OF A
AND INTERNAL IMPROVEMENT.

LONDON:

PRINTED BY C. MACRAE.

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TO THE READER.

IT is requested that this paper, may be returned to the Board Agriculture, at its Office in London, with any additional rema and observations which may occur on the perusal, *written on margin*, as soon as may be convenient.

It is hardly necessary to add, that this Report is, at prese printed and circulated, for the purpose merely, of procuring f her information respecting the husbandry and internal impro nents of this district, and of enabling every one, to contribute mite to the improvement of the country.

The Board has adopted the same plan, in regard to all the ot counties in the united kingdom; and will be happy to give ev assistance in its power, to any person, who may be desirous of proving his breed of cattle, sheep, &c. or of trying any use experiment in Husbandry.

LONDON, MARCH 1794.

INTRODUCTION.

HE zeal which I felt to promote, to the best of my abi-es, the important objects for which the BOARD OF AGRI-LTURE was constituted, led me to undertake the sur-y of two districts, which, from their great extent, the riety of objects to investigate, added to other circum-nces with which it is needless to trouble the Board, st necessarily render my Report not so complete as I uld have wished. I hope, however, that it will meet with t candour and indulgence of which it stands so much in ed.

I flatter myself I shall have it in my power to add much this short account, against the time that further informa-n is collected by the Board, for the republication of these eports.

SECT. I.

EXTENT.

THE County of Devon is universally acknowledged to be one of the most valuable provinces in the kingdom of Great Britain. It is equal to the whole of the Genoese territories; not inferior to all the Balearic islands, which were once a monarchy; and twice the size of Algarve, which is still so.

It

It is bounded on the north by the Bristol Channel, and part of Somersetshire; on the east, by Somerset, Dorset, and St. George's Channel; on the south, by St. George's Channel; on the west, by the county of Cornwall.

Its extent, from sea to sea, taken from Praul Point, near the Start, and Salcombe, in the south, to Countesbury Foreland in the north, is sixty-one geographical miles, or about seventy statute miles and three quarters.

From the eastern boundary of the county, where it makes an angle with the river Ax, and limits the north-east of the parish of Thorncombe, on the borders of Dorset, to Hartland Point, on the north-west, it is about sixty-two geographical miles, which is nearly seventy-two statute miles. Devon is about 287 miles in circumference, whereof its maritime coast is nearly 150 miles.

To ascertain its area, an oblong may be measured of fifty-eight miles from north to south in length, and forty-four miles from east to west in breadth. The land stretching beyond in the east, west, and south parts, will more than fill the deficiency in the south-east, south-west, north-west, and north-east. This affords the contents of a superficies amounting to 2,552 square miles, or 1,633,280 acres of land, including rivers and lakes.

In Templeman's Survey, taken from old maps, he makes it 2,385 square miles.

The above computation is taken from Don's map, with the aid of the surveys made for the new map of Devon, by Mr. Tozer, of whose accuracy I have had many proofs. *

I think, therefore, that Devon may be computed at about 1,600,000 acres.

* It is to be hoped that this map will meet with general encouragement. It is much wanted, and I am persuaded will be well executed.

SECT. II.

CLIMATE.

THE distinguishing characteristic of the climate of Devonshire is mildness. One is inclined to think, and I believe there is little doubt of the fact, that climate has a great effect upon the temper of the inhabitants of a country.

I have not found any one who is acquainted with this county, and possesses a spirit of observation, who is not sensible of this concurrence of circumstances in this delightful county, which may be justly denominated the Montpeillier of England.

The mild dispositions, affability, and kindness of its inhabitants, conspire with the temperature of the air, the fertility of the soil, and the great beauty and variety of scenery, to render many districts of this county, particularly the southern, the most interesting and pleasing of any in the kingdom.

This mildness and temperature of climate is more particularly felt in winter. Protected from the cold northerly, and north-eastern winds, by the grand projecting mountains of Dartmore, the contrast is strongly felt by those who have been accustomed to pass their winters on the eastern coasts of the island, and much good effect has resulted from this circumstance to those who are afflicted with asthmatic and pulmonary complaints.

Medical men are now so much convinced of the advantages resulting from the mildness of climate of the south of Devon and Cornwall, that they recommend it to their patients in preference to Lisbon. A gentleman well known in the polite world, who has been long afflicted with asthmatic complaints, informed me that he had tried every climate in Europe, but that he finds the air of Devonshire so much

superior in mildness, that he intends for the future constantly to pass his winters in the southern part of that county.

From this advantage in point of climate, there is little interruption to vegetation in time of winter. It has the appearance almost of a perpetual spring. In the south of Devon, the snow seldom lies on the ground in severe winters more than three or four days.

In the high grounds of Dartmore, and in the northern parts of the county, the climate is not entirely so mild; but the difference is not so great as the inhabitants themselves apprehend.

On Dartmore and the high grounds adjacent, snow continues in severe winters, sometimes ten days or a fortnight, but seldom longer.

SECT. III.

SOIL.

THERE certainly is no county in England, which contains a greater diversity of soil, than the county of Devon. There are, however, some great outlines of bold general discrimination in the strata of this county, which, by the help of the annexed map, I shall endeavour to explain.

In order to convey a more precise idea of this subject, I shall beg leave to divide the county into districts, according to the natural division of the general strata.

I. SOUTHERN AND EASTERN DISTRICT.

Strong Loam.—A strong loam, on a clayey bottom, predominates through the whole of the southern, and the greatest

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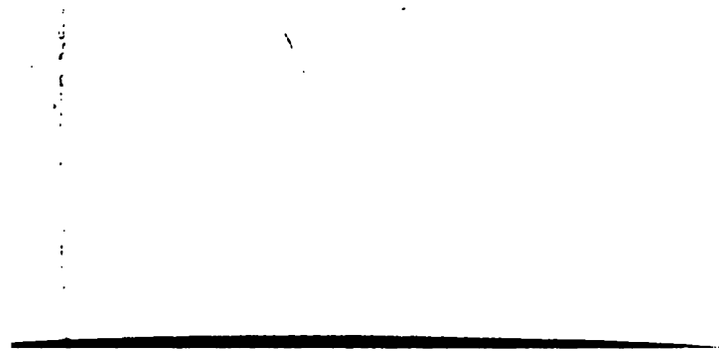

part of the eastern district of this county. This kind of soil extends from the south western extremity of the county, beyond Plymouth, along the whole line of the sea-coast, until you arrive at Axmouth, and a little beyond it, almost unto Lyme in Dorset, in the east. This may be considered as the southern boundary of this stratum.

Its northern boundary stretches from the river Plym to Brent, Ashburton, Newton Bushell, near Teignmouth, and from Newton Bushell towards Haldown Hill, which interrupts the strata by a large extent of flinty rock. Passing Haldon, the stratum is continued to Ashton, South Tawton, Samford-Courtnay, North Tawton, Crediton, Cullumpton, Broadhembury, to near Axmouth, on the east.

In this extensive district, there are numerous hills or downs, on the tops of which the soil is often shallow; but every where in the slopes hanging on the vales, and in the bottoms adjoining the rivers, there is a rich clayey loam of various breadths.

The hills themselves are chiefly in that part called the South Hams, extending from the river Ex by Haldon to Plymouth, composed of marble or dunstone, covered with a rich hazle, or red loamy mould; and are all of them finely cultivated to the very summit.

There are also some few spots of rich blue marl intermixed, near the vales, with strata of a brown slate.

In so extensive a district, it is natural to suppose that considerable varieties are to be found, but these varieties are generally to be traced to obvious causes, chiefly arising from the greater or lesser declivity of the hills; and it holds universally, that wherever there are rivers intersecting the strata, of which there are great abundance, that in the adjacent vales the soil is of a superior quality, and in general composed of rich friable loams.

These rivers all take their rise in the mountains of Dartmore, from which they have no doubt brought these trea-

sures in ancient times, and robbed their maternal source of much of its riches and fertility.

Included in the above general outline, is a district consisting of strata of red marly loam, that is not to be exceeded in richness and fertility by any in the county, or perhaps in any part of England.

This singularly rich stratum has a marked, but irregular progress, through different parts of this district; which I shall beg leave more particularly to describe.

It begins in Plymstock, near Plymouth; from thence it holds its course to Yealmpton, Modbury, Aveton-Gifford, Ugborough, Ermington, Harburton, Ashprington, Stoke Gabriel, Paington, Marldon, Cockington, Coffenswell, King's Kerswell, Combeinteign Head, Stokeinteign Head, Teignmouth, Bishopsteignton, Mamhead, Powdersham, Exminster, North Tawton, Bow, Collumpton, Clysthaydon, Broadclyst, Broadninch, and several other parishes adjoining the east.

This soil is of great depth, and consists of a firm rocky marl, easily friable when exposed to the air or to water; feels greasy or soapy in the hand, and effervesces with acids.

It produces a very rich grass, on which cattle fatten speedily. Very strong crops of corn are produced on this soil, but it is considered more profitable to keep in grass for bullocks.

It answers very well as a manure for poorer lands; but it contains so much calcareous earth, that it must be laid on sparingly. The trefoil springs up every where spontaneously, and where there is an opportunity of irrigating the surface, the grass is of wonderful luxuriance.

Throughout the whole of this district there are a number of hills or downs, which answer well for breeding sheep. In the eastern part they run out into a considerable length, towards the borders of Somerset, but of no great breadth.—They are of great advantage to the proprietors of the inter-

vening vales, and serve for a change to their stock, or for tillage.

Towards the eastern extremity of the county, this rich stratum, near the sea, on the borders of Dorset, stands upon white chalk, and here and there stratum of blue marl is to be found. This approaches, however, more to the nature of clay, and is not in general a good manure.

2. WESTERN DISTRICT.

Black Growan, Clay, boggy or gravelly.—This district rises onthe west and north of that which we have now described. By an elevation in some parts sudden, and abrupt; in others by gentler declivities, interrupted by numerous winding vales, it terminates, as to its highest elevation, in the mountains of Dartmore.

This I have made to begin in the south-west, on the river Plym, below Bickleigh; from thence to Cornwood, Harford, Holne, Buckland in the Moor, and Ilsington. This forms the south boundary. From thence, proceeding north-west to the Teign river, near Moreton Hempsted, Chagford, Okehampton, and to near Hatherleigh; from thence to Holsworthy, and the river Tamar, which river forms the western boundary, dividing also the county from Cornwall.

Throughout the whole of this district, the same sort of mineral strata prevail which we have described in the Survey of Cornwall, as proceeding in almost an uninterrupted chain of mountains, from the Land's End to the bounds of this district; in all which, to the furthest boundaries we have described, innumerable traces of ancient workings of mines are to be seen.

There is scarcely a valley which has not been streamed and robbed of much of its soil, by the avaricious hands of tinners washing it away in search of ore.

Excepting the vales of Whittecombe, Buckland, part of Holne, and along the banks of the Tamar and the Tavy, there

are

are only patches in cultivation. By far the greatest part consists of undivided wastes and commons, amounting to between 2 and 300,000 acres of land, if not even more than that quantity.

In the center of these wastes is situated the forest of Dartmore, the property of his Royal Highness the PRINCE of WALES.

This forest is the highest part of the district. In the north parts of this forest, and the highest grounds, the soil consists of extensive tracts of a wet turf, or peat, of great depth; in other parts of a light black soil or gravelly, intermixed with a yellowish or whitish clay. Declining from the forest, in other parts of the district, it partakes more or less of similar qualities; chiefly light black peaty earth or gravelly. Many of the vales, both on the forest, and in other parts of the district, appear very capable of improvement; and the whole, if properly stocked with cattle and sheep, capable of being made the source of additional wealth to the kingdom.

This district I have considered as the principal object of my investigation, and I have paid the utmost attention to make myself acquainted with all the leading circumstances, which I shall lay before the Board in the sequel of this Report.

In the mean time I shall proceed to the general description of the other districts.

3. NORTHERN DISTRICT.

Sandy.—In the northern district I comprehend the lands around Ilfracombe, Combe Martin, South Malton, and along the borders of Somerset.

The soil here is of a light sandy quality, on a stratum of dunstone. These lands are not productive of a very luxuriant grass, but they make excellent feeding for sheep and young

young bullocks Between Cullumpton and Wellington, across this district, the mould is intermixed with a flinty stratum like that on Haldon Hill. This is not of great extent, and goes westward from Blackdown Hill.

4. THE MIDLAND DISTRICT.

Clay and Fenny.—The midland district reaches from the extremity of the county in the north-west to the Taw river; from thence, near Chumleigh, as far as Witheridge, towards Tiverton, going east; from thence returning back to Upton Helyons, Bishop's Morchard, Winkleigh, across the Taw, Okement, and Torridge rivers, to Holsworthy; and from thence to the borders of Cornwall. This district I take to be chiefly clay, with strata of sand in different parts. A great part of it is fenny. It is capable of great improvement by draining. Through this district several navigations are proposed, which will be of great advantage to the culture of the lands, particularly one from Bude Haven, towards Holsworthy and Hatherleigh.

I HAVE endeavoured, in this manner, to give as distinct an account of the soil of Devon as this short sketch will allow.

I shall only add here, that in many parts of the South Hams, there is an under stratum of marble rock, of various colours. This stratification, as far as it is known, I shall more particularly specify. At Plymouth it is found on the sea-shore; it then proceeds more inland, through the parishes of Plymstock, Ycalmpton, Modbury, Ugborough, Harburton, Darlington, North Naish, Dean Prior, Buckfastleigh, Ashburton, Bickington, Chudleigh, Ideford, Kingsteington, Welborough, Highweek, East and West Ogwell, Torbryan, Broad Hempston, Little Hempston, Staverton, Berry-Pomeroy, Stuke-Gabriel, Cherston-Ferres, Brixham, Paynton, Marldon, and Mary-Church.

In

In the western district, marl or limestone is also to found in the parishes of Drewsteington, South Tawto Sourton, and Bridestow.

The lime strata, as far as is known, are shaded in the m

I am informed that a lime rock is now discovered on estate belonging to Mr. Rolle, in the parish of Ashford, n Taw River.

SECT. IV.

THE MANNER IN WHICH THE LAND IS OCCUPI

DIVIDING the county into districts, will be attended v this advantage, that those residing in each division wil able to convey to the Board much local information, wh without such a division they would not be so easily abl do. So great is the extent of the county, and so little in course is there between the people in different districts, it is very rare to find a man who is acquainted with any of the county, except in his immediate neighbourh and I have scarcely met with any who possess a gen knowledge of the whole county. At the same time, t are certain general circumstances common to the whol the county, which, to avoid repetition, may be taken u general heads.

In general, throughout the whole of the county of von, the land is occupied by tenants for the terms of nin nine years, determinable on three lives. These are consi ed, as in fact they are, a species of independent prope and are generally called the estates of the holder, altho

in other counties a fee-simple property only, generally obtains that denomination. These life-estates, are frequently let out for terms of seven, fourteen, or twenty-one years, but many occupy their own. Farms in general are small, from twenty to forty acres being the common run of the holdings in this county. Of late, the farms are beginning to increase, and one farmer is sometimes found to occupy two, three, or more, of these tenements; but I found very few farms exceed two, or at most three hundred acres.

The freehold property of the county of Devon is also very much divided, perhaps more than in almost any county of England. The large tracts of country granted to the ancient barons, have been subdivided amongst their descendants, or sold, so that, a few families excepted, there are no very great proprietors, but there are a great number of gentlemen of easy independent fortunes, who pass their time chiefly on their own estates, and live in great harmony with each other, and with the respectable yeomanry in their neighbourhood.

In the South Hams in particular, this respectable class of yeomanry is more numerous than in any district of England I have seen. They live in great comfort, and exercise without parade, that old English hospitality which the refinements of modern manners have banished from many other parts of the kingdom. I observed with much pleasure, the attention they paid to their various dependants around them, and their kindness to the poor. Nothing can evince this more strongly than the agreements they have entered into, in most parts of this district, to supply the labourers and neighbouring poor with grain, at certain fixed moderate prices, an example well worthy of more general imitation.

In some parts of the county of Warwick, the same practice takes place.

While at the same time this general distribution of property into small divisions, is considered by many as an advantageous state of society, by tending di-

rectly to increase population and diffuse happiness, it is doubted by others, whether such a division is so much for the interests of the state and the improvement of agriculture, as large and extensive farms, which require a great capital, and afford scope for extensive experiments.

Leases on lives also afford an irregular kind of income to the proprietor, and the holder frequently pays so great a proportion of his little capital for the purchase, that he has only a small sum left, not perhaps sufficient to stock and work it with advantage. When these leases also hang on one life, it tempts the tenant to run out of the ground, from the apprehension of being obliged to pay a fine, on renewal, equal to the improvements he may have made.

On the whole, I found that the people in general are very desirous to possess themselves of leases on lives, from their considering it as a more permanent and independent species of property; but I am inclined to believe, that if the sums in general paid for life-hold estates were applied, with a competent knowledge, to improving the lands upon a term of fourteen or twenty-one years, a much greater profit would arise from the capital so laid out, and a reciprocal advantage acrue both to the proprietor and tenants.

SECT.

SECT. V.

DISTRICT I.

SOUTHERN AND EASTERN DISTRICT.

IN the general description of this district, I have characterized the soil by calling it a strong loam on a clayey bottom. This clayey bottom does not always predominate, and therefore it is more properly distinguished by a *strong loam.* Different opinions are held respecting the bounds of that part of the district called the *South Hams*, some stating it to be that part south of the Dart; and others to extend to the river Ex; but by the best informed, I find it is strictly bounded by the river Teign, proceeding up the Teign as far as Teign bridge, near Stover. Bovey Heathfield is not included, but taking a line from Teign bridge to the south part of this heath, it proceeds, as before described, along the south of the Dartmore hills, to Plymouth, including a tract of country nearly equal in extent to one fourth part of the whole county, and in point of richness of soil, abundance of grain, fruit, sheep, and cattle, perhaps not to be equalled by any district of similar extent in Great Britain. On one side of this land of plenty, is situated Cawsand Bay, Plymouth Sound, and the Hamoaze; on the other side the charming and excellent roadstead and harbour of Torbay. Nature kindly seems to have placed these admirable bays, so excellently adapted to the equipment and rendezvous of the navies of Great Britain, in the neighbourhood of a country, which can always furnish abundant and ready supplies of provision. The numerous ports and harbours in this district, afford also great convenience for foreign and domestic trade; particularly for the Newfoundland Fishery, which forms an excellent and extensive nursery of seamen.

The scenery of this district is most admirable; whether we view the Teign, the Dart, or the Tamar, and their beautiful banks, or take a general view of the country, charmingly diversified with hill and vale: the vales interspersed with villages in the midst of orchards, and the hills fringed with wood, and cultivated to their summits.

In addition to this delightful scenery, you have in most parts a view of the ocean, presenting itself in some grand and beautiful bay, covered with fleets, the sources of our wealth and commerce, and the proud bulwarks of England. On the other hand the range of the Dartmore mountains form a back ground to the scene, that give an air of magnificent finishing to the whole; forming altogether the most beautiful and interesting picture that is any where to be found.

HUSBANDRY OF THE SOUTH HAMS.

THE greatest part of the land in this district is under a course of husbandry; scarcely any of the land is kept wholly in grass, but is alternately under grain and grass, and no part is kept unbroken up by the plough, except the water meadows. The rotation of crops for this purpose, varies according to the skill and industry of the farmer.

The general practice is, when they break up the grass lands, to take first a crop of wheat, and then barley or oats, with which last is sown grass seeds. Turnips are some-times taken as a first crop, but not cultivated on an extensive scale. Many of the farmers take three white crops succeeding each other, without any fallowing, a practice hardly known elsewhere. Although the soil is so rich, as to enable them to pursue this system, without absolutely destroying its fertility, it is not approved of by the best farmers, who go very much into the plan of laying down the ground to grass in good heart.

SKIRTING AND BEAT BURNING.

THIS process, which, I believe, is peculiar to Devon and Cornwall, has been uniformly practised in this part of Devonshire for near 300 years; and whether the farmer intends to sow wheat or turnips, this is the uniform mode of breaking up grass lands. Skirting is properly a sort of half ploughing, as two or three inches of surface of the ley is left unturned, and is covered by the furrow, cut very thin, with the grassy side downwards; so that the grass side of the furrow, and the narrow balk which is left unturned, being in contact, soon rot by the fermentation of the sward. If for turnips, it is turned thin about Midsummer, and is immediately worked; if to lay to rot for wheat, in the fall of the year it is turned a little deeper. The operation is performed by a wing turned up the furrow side of the plough-share, which cuts the furrow the breadth the farmer chooses; generally about four inches and a half. This operation is sometimes, also, performed by spading, or paring with a breast plough; sometimes, also, with a mattock. But skirting with the plough is generally practised. The best time for this operation is before Christmas, if the grass can be spared: the winter frosts bring it into fine order, but in general it is done in summer. After laying some time, it is cross cut with the plough and well worked with harrows, and either left to rot, or again harrowed and rolled with much care and labour, until the broken sod is made very light, and the earth shaken from the grassy roots and weeds, which are then raked together by hand into heaps, and burnt, which process is called *beat burning*. A man will rake from an acre to an acre and an half per day, if it is in good order.

MANURING THE LAND WITH LIME.

IN the greatest part of this district, the land thus prepared, is manured with a compost of earth, lime, and burnt ashes. They take

take of lime about 48 Winchester bushels heaped, to an ac
adding to it the burnt ashes and earth in the proportion of
or 12 to one of lime. The earth they generally take from n
the hedges of the field, for which purpose they turn up th
or four deep furrows round the fields, about Christmas,
lay for their compost. The price of lime depends upon
price of culm, which is brought from Wales, and the c
tance from the place of import. In the neighbourhood
Totness, for instance, to which place the river Dart is
vigable, the farmers reckon that when culm is about 10s.
per quarter, their lime will cost them about 3l. 10s.
acre; and take the whole expence of tilling and dressi
at near 5l. per acre. They generally sow thick, and t
generally two Winchester bushels of wheat to sow
acre. They expect a return per acre of from 26 to
bushels of wheat; barley 40 to 45 bushels per acre. Bar
however, produces more on some of the lands in the southe
most parts of Devon, near the sea. The average produc
the whole district may be stated at 20 bushels an acr
wheat, and 32 of barley.

SEA SAND.

In the southern part of this district, they are at a c
siderable distance from lime, and they therefore m
use of *sea sand* as a substitute for lime, to the amoun
one or 200 seams per acre (each seam contains two bush
which they mix with earth, the scrapings of the la
mud from ponds, bottoms of the ditches, &c. and above
when they can collect it, with rotten dung, to the amoun
about 120 seams each; all of which is generally carrie
horses backs: on account of the country being hilly, c
are very little, or not at all, used, for the purposes of agri
ture. The best farmers spare no labour or expence, to
lect these different manures, and mix them with each o
with great care. This compost of dung, mud, and sea s
is reckoned a most excellent manure, and more lasting
the composts with lime. This is practised, in great
fe

fection, by the Messrs. Cornishes, at South Allington, whose farms would do honour to any country, and by all the farmers near the sea coast. Adjoining to the sea coast, in this southernmost part of Devon, there is a small tract of land remarkable for its fertility, rather stoney, and not of so light a soil as what is to be found about a mile from the shore. Adjoining to this, is a tract of level land stretching from the Start on the east, to the Bolt-head on the west; the surface mould is of a light black nature, and underneath it a tough yellow clay, under which are found gravel and hard spar. This soil, although not so rich as a great part of this country, has been cultivated by the Messrs. Cornishes with great attention, and in a dry season it produces exceeding good crops of red wheat, barley, and black oats; but if the season is rainy, the wheat and barley will be a poor and a small crop. The district of South Devon, which is around Kingsbridge, Salcomb, and from thence to Dartmouth on the one hand, and to Modbury, is remarkable for its produce of barley, which is exported from Salcomb in quantities hardly to be credited. The whole of this country abounds with hills and narrow vales, all of which are highly cultivated. The people have their habitations in these vallies, or towards the sea shore; so that while you ride along, you see so very few habitations, that one is surprised where the hands come from which must be required for the labours of the field.

However much it may be the custom to think, that in a country so distant from the metropolis, the people know little of the theory of agriculture, yet I am fully convinced, that in point of the practice of cultivation, the labour and care of manuring their lands, there are no people in any district of England of equal extent, where there is so much good husbandry as in the South of Devon. And although their practice of skirting and beat burning, may be condemned by those, who have made extensive experiments in new modes of husbandry; yet it is a fact, that this practice has been

been constantly followed in this district, for several hu
years, and with great success.

Turnips, of late, are introduced in the rotation of
and frequently as a first crop after breaking up. The
them off by February and till for barley; they sometim
down immediately with grass seeds, but often take a c
wheat, and then barley and grass seeds. They mant
the wheat crop. Fallowing is hardly any where pra
Their turnips are generally sown broad-cast, nor do t
general hoe them, although it is found to pay well for t
pence. The drill husbandry has been practised b
Byne of Stockledge, near Chadleigh; and by Mr.
farmer, on the estate of James Templer, Esq. of
who have both found it to succeed extremely well
Byne makes use of Mr. Cooke's drill plough, and
liberal in lending it to his neighbours; but few, exc
Ball, who is in every respect an uncommonly int
farmer, have been induced to make the experiment
farmer, who was prevailed upon to try it in a field of
for about a quarter of an acre, declared to me, that
convinced if he had sown the whole of his field v
machine, his crop would have been better by t
forty pounds. This machine is also a horse hoe, an
implement to be fitted to it that would do excell
skirting. The whole costs only fourteen guineas, an
most amply repay the farmer both in the saving of s
by his having his ground kept clear of weeds, and
ample crop. I am sorry to observe it stated in the
Warwickshire, that drilling, or as it is called,
system of agriculture, has not been found to answ
Moor of Charlcot, however, has requested me to
with him it has answered admirably, and has begged
recommend it to the farmers of Devonshire, wi
country he is well acquainted; and is persuaded it

found extremely useful, and would soon rid the farmers of their couch grass, which is the great plague of the farmers in Devon.

I have endeavoured to investigate the principle of the new husbandry, and I have examined, with much attention, the result of the experiments which have been made. In looking into old books, I find that the perfect plough, which performs the operation of ploughing, sowing, and harrowing, at the same time, was known to the Romans; but I have not been able as yet to discover the particular construction of the machine they made use of for that purpose. The construction of Mr. Cook's drill plough appears to me very perfect, and added to the experience of Mr. Moor of Charlcot in Warwickshire, I am authorized in saying, that Mr. Crook of Tytherton, near Chippenham in Wiltshire, has practised this mode of culture with great advantage; and that he will be happy to see any of the gentlemen or farmers of Devonshire at his house, and give them every satisfaction in his power respecting the use and application of this system of husbandry. I own, that I am convinced, that the use of this machine would be a great improvent to the husbandry of Devonshire: and as it is a vast saving of labour, is extremely important in the south part of that county, where the propensity of the young men to go to sea, in the Newfoundland, and other branches of the fisheries and commerce of the kingdom, is so great, as to render hands very scarce for the business of agriculture.

A spirit of improvement, has lately thoroughly pervaded the respectable yeomen in the South of Devon, which has been greatly aided and excited by the institution of the Agricultural Society of South Devon, which is conducted on a plan that deserves the greatest praise, and must be productive of the best effects, and which I shall take the liberty of stating to the Board at some length in its proper place. Having

ing now submitted what has presented itself to me, respecting what I call the husbandry of this district, I shall only further remark, that improving the facility of internal communication by roads and canals, in order to enable them to convey manure, particularly sea sand, is of infinite importance, and a circumstance to which, (especially canals) little attention has been paid. James Templer, Esq. of Stover, has, in the way of communication by canals, and in turning them to advantage by watering the lands adjacent, introduced a principle which is capable of wonderful extension in many parts of this county, particularly in the northern districts. This gentleman, to whose kindness, attention, and anxious regard to shew me every thing and procure me information, I am much indebted, has, by a management in the distribution of water from a canal communicating with the sea at Teignmouth, united the *utile* and *dulce*, with much propriety and effect; and which, at the same time that it reflects great honour on his genius, and must be productive of great personal emolument, has brought into light a principle of improvement, not, hitherto, at all attended to; but perly considered, will shew that navigable canals may be rendered of advantage to agriculture, in a degree which is not thought of, where they are confined merely to the purpose of conveying articles of commerce. The mode in which this is effected, I shall explain under the article of *watered meadows*. It is sufficient to observe here, that Mr Templer's canal, which he is extending from the sea to Chudleigh, where there is abundance of lime-stone, and to Bovey Tracey, where there is the Bovey coal, extremely advantageous for burning lime, and another branch which he is also extending to Newton Bushell, will enable the people there, to cultivate and improve that part of the county in a great degree, some parts of which are at present, particularly Bovey Heathfield, the most neglected in the whole county; but

but which being of a similar nature to the soil I have described, near Mr. Cornish's, South Allington, I have no doubt of its being capable of similar improvement, when lime and sea sand can be procured with the facility they will, when this canal is finished.

Mr. Templer has already tried the effect of the sea sand from Teignmouth, and found it answer wonderfully, by merely spreading it on his grass lands. I would, however, recommend the South Devon management of forming a compost of dung, mud, and sand. As this (forming canals) is a subject of great public importance, and a principle of improvement, which I wish much to impress on the minds of the gentlemen of this county, I shall beg leave to enter into an explanation of this subject at some length, as it will elucidate much of what I have to state respecting the improvement of this county, in which, although the south is so highly improved, there are immense tracts in the other districts entirely waste, or not at all improved to the amount of which they are capable.

SECT. VI.

CANALS FOR AGRICULTURE.

THE mountains of Dartmore, as we have already explained, form the grand reservoir from which water is plentifully distributed in numerous streams, to all parts of the county. I have seen, within the distance of three quarters of a mile of each other, the waters of the Dart issue on the south, and of the Okemet on the north; the one of which empties itself into St. George's, and the other into the Bristol Channel. The sources of these rivers are computed to be

not more than between eight or nine hundred feet above the level of the sea; and yet, except some of the *torrs*, this summit is higher than any other part of Dartmore, so that the height of this country, is by no means so formidable as it appears, to the view of a common observer. Descending from this summit, there is an immense extent of mountainous land, through which there are vallies and levels to be found, by which canals might be extended on a level for miles together. It has been suggested, that a canal in this way may be formed, on the most extensive summit level that can be found, for boats only carrying a few tons. It is then proposed to form another canal on the next lowest summit level, and to drop down the boats into this second canal, by means of the inclined plain, (a very ingenious improvement on which has been invented by Mr. Templer) or by other machinery, in case water for the locks could not be spared without injuring any works on the rivers below the hills, of which, however, I apprehend, there is no danger. Surely water cannot be applied to any purpose more beneficial than what is proposed by this, the cultivation of waste land. Proceeding in this manner, we should obtain a series of canals, forming an easy communication to all parts of this waste, and with the sea, by Mr. Templer's, towards Teignmouth, by which lime, coal, sea sand, &c. would be conveyed to this waste, and the granite, tin, copper. &c. with which it abounds, would form a trade in return. Canals, might in the same way be easily made, in the extensive country to the north of the forest, either joining with the Dartmore canals, or for the purpose of distributing sea sand, lime, &c. through that extensive district, great portions of which remain uncultivated on account of its distance from manure. If this plan should be carried into execution, an alteration to the better would speedily take place in the county of Devon.—Agriculture, which has hitherto, to the surprise of strangers, proceeded so short a way from the sea coast, would rapidly

extend

extend itself into the heart of the country. The brown heath on Dartmore would soon be turned into the verdant green. Instead of a number of miserable half starved, and scabbed sheep, which are to be seen wandering over these wilds, without the fostering care of the watchful shepherd, you would have regular flocks, conducted with skill and care, that would be an additional source of wealth to the country. And these wastes, which are at present a disgrace and reproach to the inhabitants of this county, would be speedily converted into arable lands, meadows, and pastures, and interspersed with chearful villages, erected on the various streams with which these wastes abound. These ideas are by no means the schemes of a projector. They must present themselves to every person of observation, who examines the natural situation of this country, and have been suggested to me by people of practical knowledge in forming navigable communications, before I had an opportunity of personal investigation into the circumstances, which might determine the practicability of the plan. If that plan were executed, I no longer entertain any doubt, that it would not only prove highly beneficial to the country, but that it would also afford a fair ground of a reasonable speculation in which individuals might adventure. One great advantage is, that in that line leading to a junction with Mr. Templer's canal, the proprietors on the line are not very numerous, and of that exalted rank and great property, that I have no doubt they would be very ready to give their consent to the passing through their lands on very liberal terms, one of whom, Lord Courtnay, has behaved in a very liberal way to Mr. Templer, in the extension of his canal through part of his Lorship's grounds, by which that nobleman's lands, and those of the adjacent proprietors, will in the end be much benefitted. A great part of this proposed navigation will pass through the land of His Royal Highness the Prince of Wales, whose Council will undoubtedly give every reasonable encouragement to such an undertaking, which

which has for its immediate object, the improvement of his Royal Highness's property, and the neighbouring lands; and will alone render those lands valuable, which at present produce very little value to his Royal Highness, or to the community, as I shall, I think, be able to shew, when I come to the description of that district of the county. In this place I shall proceed to a few other observations on the southern and south eastern district.

SECT. VII.

GRASS LANDS, CATTLE, AND SHEEP, IN THE SOUTHERN DISTRICT.

I HAVE chiefly pointed my description of the husbandry, to that practised in the South Hams. Around Exeter, and towards Honiton, the Vale of Taunton, and all that district, to the borders of Dorsetshire, they have a greater proportion of their lands in grass, and rear a considerable number of cattle and sheep. In the neighbourhood of Exeter, and all around in this district, they produce a good deal of butter for sale, which is made in a way intirely peculiar to the people in the counties of Devon and Cornwall, and no where else practised, I believe, in England. The use of the churn is not known. They put the milk into pans, either made of copper tinned, or brass, or in brown earthen vessels, glazed, which they place on a stove gently heated with charcoal, and scald it until the cream is raised to the surface of the milk, by the operation of the heat. When it has continued on the stove a certain time, which the dairy-maid judges of by practice, bringing it as near to boiling as possible, without doing so, it

is

is then set by to cool. Twelve hours are sufficient to stand in winter, although it generally remains from four o'clock in the afternoon, to seven the next morning: sixteen hours are customary in summer. The cream is then taken off, and it is worked up by the hand, without any churn, into butter. The operation is performed by the dairy-maid turning the cream round with her hand in a circular motion, always moving it in one direction, which unites the particles together.*

The butter made carefully in this way, is very sweet and good, but very frequently, when carelessly made, is ill tasted, arising either from being too much scalded, or I am afraid too frequently from the use of copper and brass pans, with which the oil of the cream has a natural tendency to generate verdigrease. Earthen pans are, however, in general use. Brass pans being supposed to raise more cream, are too often made use of. The Norway stone pans would answer the purpose well.

This practice renders the cheese very bad indeed, that is made of the scalded milk. It seems to be adopted to save the labour of churning, and it would be well if copper and brass were entirely prohibited for this purpose, and that they should be obliged to use earthen vessels, or block tin, which is best, as even the glazing of brown earthen ware is composed of zinc and other substances, which are poisonous, and may in some degree impart a noxious quality to the cream. They allege, that no other sort of earthen but the coarse brown ware will do.† The cheese of the scalded milk, is sold to the poor at two pence per pound; the butter varies in price: in the North of Devon it is six-pence per pound in summer; but in the South, last summer, on account of the fleets and encampments, butter was fourteen and eighteen pence a pound. At an average a cow produces one pound, consisting of seventeen ounces, per day. Some very good cows will produce a pound and a half

* Why not churn it though it has been scalded?

† At Mrs. Hempel's Manufactory, King's Road, Chelsea, there is made an excellent sort of earthen ware for boiling any article, and particularly adapted for milk.

half or two pounds. I should be glad that some of the co
respondents of the Board would inquire, at what place on t
borders of the neighbouring counties, the practice of churn
ing ends, and that of scalding, or as they call it, makin
clouted cream, begins. There must be some point of divisio
in this practice, that might lead to some traditional histo
respecting it. Although I cannot say that I am inclined
recommend this practice to other counties, as I am not certa
that the dairy-maids will be found in other counties so n
and cleanly as in Devonshire, yet there is a practice, whic
I have been informed, is excellent to prevent the disagreeab
taste that turnips frequently impart to the milk of cows th
feed upon them, which may be found useful, and is, mer
to pour a quantity of boiling water into the milk before it
set by to cool. A quart or two is sufficient for several g
lons of milk.

CATTLE.

A GREAT number of bullocks are reared, kept and f
tened in the South of Devon. The yearlings the first y
are kept upon straw, except the working oxen and co
which have hay. In summer they run in pastures, stubb
&c. They are of the short horned breed, and have beer
the south part of Devon from time immemorial. The bes
this breed are excellent milkers, and answer well for eit
work or fatting. The oxen are generally turned off to fa
five or six years old, and run up to eight, ten, and two
hundred weight. These cattle are larger and heavier th
the North Devon breed, the beauty of which is so far
and well known, throughout the kingdom. I am inform
that a bull of Mr. Bakewell's long horned breed was tric
South Devon, and that his get was very small, and not n
so handsome as the North Devon breed, nor even so la
as those. I am persuaded, from all the inquiries I have m
and every observation, that the people in Devonshire h
little occasion to go to other counties to improve their b
of cattle. And if they would only be at great pains in se

ing and breeding from their best stocks, I am of opinion they might rival any others. The long horned breed have, undoubtedly, from Mr. Bakewell's attention, got so far the start, that it would require, perhaps, his genius and perseverance to come near to them. The North of Devon cattle have, at the same time, come very much in request, and last year, a heifer was sold as high as thirty pounds. I am, however, sorry to find, that the high prices given for the best of this breed, tempts the farmers to sell them off, instead of keeping them to improve the stock of the country. In order to improve this breed to the utmost, it would require a larger capital and a more extensive farm, than in general are to be found in this county. It would, therefore, be best done by a company or society formed for that purpose. Last year, a little association was formed, by Paul Treby Treby, Esq. President of the Agricultural Society of South Devon, for the introduction of the Leicester sheep. Accustoming people to unite in these improvements is of great use, and I have no doubt but the spirited gentlemen in the South of Devon will carry their views further, and institute experiments on their own breeds of cattle, which I think are well worthy the general attention of the county.

SHEEP.

THERE are to be found in this county both the polled and horned sheep. The polled sheep, generally called nott, or knott sheep, are of a large size, with long combing wool; shear on an average about eight pounds each. More attention has hitherto been paid to the wool, than to the carcass. The wether sheep run from fifteen to thirty pounds a quarter; the average about seventeen pounds a quarter, nine to ten pounds of fat. Mr. Ball, of Berry Pomeroy, reckons his wethers at twenty-one pounds a quarter. He keeps about 300 head of sheep, and are, in general, very good of the kind.

They sell the wool to combers, and at the fairs in the neighbourhood, at from five-pence halfpenny to six-pence per pound. The nott sheep, I am persuaded, from the great difference I have seen among them, are capable of great improvement both in wool and carcass. They cut the lambs in April, and judge of the rams they keep for breed by the ewe. They reckon that in stocking with sheep, they ought to keep a sheep to such a quantity of land as is equal in value to twenty shillings. So that if land is valued at twenty shillings per acre, they ought to keep a stock equal to the number of acres. Mr. Ball informed me he had tried the Dorsetshire breed to the number of 400 and odd, but did not find them by any means so profitable as the nott sheep. They are kept in great numbers in the upper part of the county, round Exeter, and in the Vale of Taunton for the early lamb. I have already mentioned the society formed, to try the Leicester sheep, consisting of Paul T Treby, Esq. Richard Hawkins, Esq. of High House, near Kingsbridge; Mr. King, of Dean Prior; Mr. Thomas Cornish, of South Allington; Mr. George Wise, near Kingsbridge; and Mr. Savory, of Autun Gifford. I mention their names, because I hope they will transmit an account of their success to the Board. I understand, however, that the sheep they have got, are by no means the best of the Leicestershire. Mr. Cornish has, since that time, made a tour to Leicestershire to choose others. The Bakewell sheep are, without doubt, most perfect animals, and I am persuaded will be found to answer well in Devonshire. Lord Borington, a good many years ago, purchased a flock of the Leicester sheep for his park at Saltram. But from whatever cause they did not answer the expectations formed of them. They became, notwithstanding every attention that could be paid to them, afflicted with the foot rot. This must have arisen from improper treatment, or perhaps from too much wet in the grass.

I am

I am confirmed in this last supposition, by an observation I have heard, that in Wiltshire, in the chalky dry grounds, the foot rot is unknown, but that it is very common in the low wet pastures, and that driving the sheep much on ploughed chalky land will cure it. Notwithstanding the misfortunes attending Lord Borington's experiments, and although the breed has not been kept up in its purity, the sheep at Saltram, I was assured by Mr. Tricky at Plympton, who is the principal carcass-butcher in that part of the county, are much preferable to any other sheep he can purchase in the county. Sir William Molesworth, and Sir John St. Aubyn, are also trying this breed in Cornwall. Mr. Cutler, near Brixham, has also introduced the Leicestershire breed, which are much attended to, and liked by the farmers in that part of the country. A gentleman at Bow, some time ago, paid eighty guineas for a ram of the Leicestershire breed. This gentleman's name I do not know; I was informed of it by Mr. Luxmore, at Okehampton. The result of his experiment would, I dare say, be very acceptable to the Board. I endeavoured to mark every new experiment in the improvements of the breed of cattle and sheep, because it appeared to me, that attention to improvement in the breeds of cattle and sheep, whether their own, or from other counties, is that in which the farmers of Devonshire are most deficient, and to which I wish most to excite their attention. There may, however, be many experiments in this way, of which I have not been able to acquire a knowledge, but which I hope will be communicated before this Report is published, as it must be considered at present, as merely a printed manuscript, circulated for the purpose of collecting additional information. I can only say, that the kindness and hospitality I every where received, and the readiness to forward the objects of this great national undertaking, have made the deepest impression on my mind;

and if any humble exertions of mine could be of service t
the county, I shall always be happy on every occasio
to exert them. I regret that I must omit mentioning a gre
number of individuals who have the true spirit of im
provement, both from the period allotted for the survey of s
extensive a county, and from the short nature of this sketc
but I hope any selection I happen to make, will not b
imputed to any exclusive partiality. Any such partialit
would be an arrogance, which would be unjustifiable in m
and which I am persuaded, will not be imputed to me b
those with whom I have the honour to be acquainted. I tak
the liberty of mentioning this, because I am sorry to fin
that some offence has been taken, in my having omitted t
mention some gentlemen in the county of Cornwall, who,
understand, have paid much attention to agricultural im
provements. The truth is fairly this, that the plan orig
nally adopted by the President and Board of Agriculture, w
merely to give a sketch of the general objects of the rur
industry in each county, to be afterwards filled up by th
communications of the different individuals in the coun
itself. To exhibit descriptions of the operations of ind
viduals, except where new and valuable experiments we
actually made or projected, was not included in the plan
the Board, even if my time had enabled me to acqui
sufficient information of such operations. Where the gener
voice of the country has pointed these out to observation,
have noticed them, and I hope the defects will be amp
made up in the accounts which shall be transmitted to th
Board in consequence of the circulation of this Report.

Having taken the opportunity of making this explan
tion, I shall now proceed to observe, that besides th
polled, or nott sheep, there are several varieties of th
horned sheep; but as far as I could investigate, the
are only varieties of the Dorsetshire sheep. There is

shee

sheep of this species which is called the Dartmore sheep, but very improperly, as there are no sheep bred on Dartmore. They are only sent there in the summer, and consist of the draft ewes, hogs, and wethers from the flocks in the lower part of the country, to glean a subsistence on these hills, merely to make a return of their fleece. The Dartmore mutton, which is truly excellent in flavour, like all the mutton of the small horned sheep when they are kept to a proper age, is always fattened on inclosed pastures, either on the moor or on the lower lands; but as there is only a very small part of the moor inclosed, the sheep cannot be kept there in winter. Upon an average, the sheep are kept off the moor ten weeks each winter, the expence of which, I shall be able to prove to the satisfaction of the Board, is such, that with the losses, &c. renders these waste lands, instead of being a benefit, a nuisance to the county. They lead the neighbouring farmers, by the easiness of summer grazing, to overstock their farms; and I shall prove, that the best farmers, upon true principles, find it for their advantage to relinquish the privilege they have of sending their sheep to the moor in summer, thinking that privilege a loss.

SECT. VIII.

WATER MEADOWS.

THE best managed water-meadows I have seen in the county of Devon, are in the parish of Teigngrace, on the estate of James Templer, Esq. of Stover. The soil in most parts of this parish is a very poor and thin black mould, on a substratum of cold clay, which is exported in great quantities

tities for the use of the potteries in the neighbourhood of L
verpool and other parts of the kingdom, forming a very cor
siderable branch of traffic. This circumstance induced M
Templer to form a navigable canal, for the conveyance
this clay to Teignmouth, the port of shipping, without
first adverting to the use of such a canal for the purpose
watering the land. His taste for rural improvement, soo
made him perceive the advantages arising from this circu
stance. A very considerable tract of marshy land adjoini
to the lower part of his canal, which did not produce abo
eight or ten shillings per acre, some not five, he drained a
levelled. After which, by forming surface conductors f
the overplus water of the canal, and well contrived sluic
he distributed the water of the winter floods, enriched wi
the slime from the higher grounds, over these marshes, nc
converted into verdant meadows. These distributory sluic
are extremely simple and judicious in their constructio
They consist of a number of trunks placed at various d
tances, to each of which a plug is fitted. The trunks a
placed above the level of the water necessary for navigati
the canal, and when the floods fill the canal, these plugs a
taken out, and the water is instantly distributed in a ve
beautiful manner over the surface of the meadows, and
easily and speedily stopped when it is conceived they ha
run long enough. Mr. Templer has followed the sa
system in the upper line of his canal, and with similar su
cess. These meadows he lets out for pasture grounds to
tenants; and it is curious to remark the great difficulty
had to persuade them of the utility of this sort of manag
ment. He was even obliged to bribe them to pursue th
own advantage, by giving a remittance of part of their re
to those who were most industrious in draining and wate
ing the opportunity of distributing the water in the floo
So very difficult is it to excite the generality of people to
new improvements! They are now, however, very sens

of the advantages arising from this system, and are very glad to get an acre of meadow for 40s. and 3l. for which before they unwillingly paid 10s.

Another essential advantage produced by this canal, is the fine rich mud, mixed with rotten leaves of trees, &c. which is washed down by the rain, and deposited in the canal. This in the summer time is dragged out by long tined harrows, by the aid of a couple of horses or bullocks, and afterwards mixed with lime for the upper lands. This rich mud is a manure of itself, and he allows his tenants to take it freely for their own use. In this manner he is accustoming his tenants to an industry, which betters their own circumstances, while, without laying out any considerable expence himself, his land is so rapidly increasing in value, that I have no doubt, in a few years the improved value will be equal to the interest of money expended in making the canal, independent of the trade, which is daily increasing. I have already mentioned, that he has found a most wonderful effect produced by laying sea sand on these meadows, which sea sand forms a back carrriage for his barge-men, who carry the clay to Teignmouth.—What renders these operations more interesting, is, that these lands are, in themselves, naturally so barren, that it was thought impossible to improve them, and Mr. Templer was the object almost of ridicule to his neighbours. The advantages arising from the canal and from his experiments, not only to him, but to the neighbouring country, which will be more and more benefitted, as his canal is extended, are now generally confessed; and if it should be hereafter connected with any canals on the higher grounds of Dartmore, the benefits arising from it will be so widely extended, as to render it a vast advantage to the public. Mr. Templer has been no less successful in planting: he has covered all the very coarse grounds with Scotch firs, interspersed with larch and spruce. The Scotch firs,

firs, however, answer best; and he has many thousands not more than ten or twelve years growth, which would for four-pence, or six-pence each. By thinning them, leaving a sufficient quantity for timber, he will be an repaid for the capital and interest laid out in inclosing planting them. I do not know any place that will more pleasure to an amateur of rural improvements, t an examination of this little spot; either viewing it v regard to its advantages, in point of economy, or as an nament, which it is rendered in the highest degree, by great taste and judgment with which the various plantat and clumps of trees are arranged, varying with much be the scenery, from the banks of the canal, in a manner worthy the attention of those who form canals in their p for ornament.

Mr. Ball, a tenant of Mr. Templer, has, with great dustry and spirit, pursued his master's example, in drai and watering, by which his farm is greatly improved. has also, and Mr. Byne, of Stockledge, as I have be mentioned, made a trial of the drill husbandry, whic am informed, has answered very well.

Proceeding to the south from Stover, I found the far every where sensible of the advantages of water mead and every little stream is generally turned more or les serve for watering their grounds. They also catch floods on the roads, in the declivity of the hills, and distri them over their grounds. As these operations are, h ever, generally performed by the eye, they frequently much of their level, and Mr. Treby and the Society of S Devon have therefore offered premiums for the best most expeditious methods of irrigation, and they added to the ploughing matches, matches for irrigation; w have had an excellent effect, and several ingenious have invented little handy instruments for this purpose, which they take the levels for marking the conducting dr

with great expedition and accuracy. Mr. Treby himself is a capital operator, and has at his farm, at Goodamore, near Plympton, made so much use of the various little streams which he has collected, that would surprise any person unaccustomed to the advantages which a little science has over the rude practice of uncultivated art. How much more excellent is it, for gentlemen to amuse themselves, in encouraging little contests for excellence, in those various employments of the rural art, than in cock-fighting, bull-baiting, grinning, whistling, or boxing matches! To an idea of this sort, started by Mr. Treby and some of his friends, over their bottle, is the county of Devon indebted for the institution of a society, which is the more interesting, as it consists almost wholly, not of mere amateurs, but of practical farmers—the respectable yeomen of the South of Devon. It is to be hoped, that the advantages, and even the pleasure and amusement that arise from so respectable an association, will induce the gentlemen and farmers, in other parts of the county, to join themselves to this Society, or to form others in their different neighbourhoods, on a similar plan. The advantages arising from associations of this kind do not arise merely from the premiums they distribute.

A farmer, generally employed in the solitary labours of the field, has not that opportunity of constant communication with his neighbours, which artists in populous cities enjoy. The mind of man, like the dull flint, often appears sluggish and inert; but by collision of sentiments, in social intercourse, produces the brightest emanations of genius. New ideas present themselves, the discussion of which never fails to produce others: experiments are tried, and improvements in the art which is the subject of attention, never fail to be the consequence.

It is from these reflections that I consider a Society formed among farmers, like that of the South Devon, as of great importance to a country. I had the honour of attending the

general meeting of the Society in autumn 1793, at whi
was particularly pleased with the perfect freedom of del
and discussion. Every one gave the opinion that occu
to him, with the certainty of being fairly heard and atte
to; and the different Committees were conducted in the s
liberal manner.

From promoting discussions on Agriculture, I expect g
advantages to arise from the proceedings of the Boar
Agriculture. At first it is not to be expected that the B
can point out any great or new improvements; but
Board will do more, it will oblige the farmers to do w
they have not been accustomed to do, that is, to examine
the reason of the operations which they have been carr
on by habit and mechanism. It will, in fact, oblige the
improve themselves. For instance, were every farm in S
Devon, conducted like that of Mr. Edmond Andrews
Modbury; Mr. Hawkins, at Highbury; or the Me
Cornishes, and many others I might mention, I should
little anxiety about the introduction of new improvem
from other countries: they would follow of themselves.
a man once get out of the common routine of mechan
and entertain an ambition of arriving at perfection i
art, he will not be contented with common attainments,
will go on in an accelerated ratio. According to my fr
Mr. Bakewell's, strong manner of expressing himself
will find he has still a point to gain, at which he is not
rived; and if he has the true spirit, he will not stand sti

The first step towards knowledge, is to be sensible of
ignorance; and this, of all things, is the most difficult to
press on the generality of farmers, in any part of the king
This arises from the nature of their employment; more
ticularly in distant counties, where intercourse is still less
in those nearer the metropolis. I therefore wish to im
it, that forming societies, in different counties or distr
which, by having of course access to the transactions an
forma

formation from the Board, is, of all others, the readiest and best mode of improving the Agriculture of the Country.

SECT. IX.

MISCELLANEOUS OBSERVATIONS ON THE SOUTHERN DISTRICT.

PLOUGHS AND CARTS, ROADS, &c.

THE plough chiefly made use of is called the South Ham plough. It is the common swing plough, like the Norfolk swing plough; but not one fourth part of the expence. They are longer in the sole or bottom, the mould board much longer, not forming so obtuse an angle, but gently sloping from the back of the share, towards the tail of the plough, from three to four feet. They are light and handy, and make very good work. They use oxen, either two or four, with generally a pair of horses before the oxen.

Carts are little used for the purposes of Agriculture, but when they are, they are of the common kind, and drawn both by oxen and horses. The demand of beef for the Navy (which renders oxen dearer, and more difficult to be had) has rather, of late, diminished the use of oxen, and increased that of horses for draft.

WAGES.

WAGES are one shilling a day, and a quart of cyder. In harvest, the wages much the same, with as much cyder as they chuse to drink. Price of threshing wheat, from eightpence to one shilling per bag of sixteen gallons. Threshing barley, from five to six shillings per score bags. Ploughing, from

from five to six shillings per acre, depending upon quality of soil and situation. Cutting, setting, and steeping hedges, and making up the wood into faggots, from four-pence to ten-pence per yard, of eighteen feet. Hours of labour, from six to six in summer, and from seven to five in winter.

DRAINING.

GREAT attention is paid to draining land, without regard to the expence. Drains are made from four to twelve feet in depth, and are never judged well done unless dug to the bed of gravel, which lies under the different strata of mould clay, &c. On this gravel a gutter is built, with a wall of stones on each side the trench, leaving between the two walls an opening of three, four, or six inches, in proportion to the size of the spring, and carefully covered on the top with flat stones. On these covers the small stones gathered off the adjoining lands are thrown, from three to six inches, or more thick, lining the top with fern, straw, furze, &c. and filling up the remainder of the trench with the mould thrown out of it. These springs are frequently conducted to a pond, and made some other use of for watering the land, &c.

TURN OF THE PEOPLE FOR IMPROVEMENT.

THE people in this district have evidently a great turn for improvement, which is very much increased by an example shown by the gentlemen of the county, and the encouragement and fashion they have given to agricultural enquiries, which, it is hoped, will be further increased by the exertions of the Board. The Hon. Mr. Justice Buller has, in encouraging this turn for improvement, been of vast use to the county, not only from the experiments he is constantly making, in endeavouring to improve the waste lands in Dartmore, which we shall have occasion to describe more fully, but by

making

making his hospitable mansion the constant resort, not only of the intelligent farmers of the county, but by inviting men of extensive experience from other parts of England, by which he has introduced an intercourse which excites curiosity, and stimulates his neighbours to enterprise and emulation.

CONCLUSION OF THE SOUTHERN DISTRICT.

I HAVE only, in my remarks on this district, further to add, that I met from all descriptions of people the greatest zeal to forward the objects of the Board, and the greatest alacrity to afford me every information I could wish. In this respect I am particularly indebted to the President and Members of the Society of Agriculture, whom the Board did me the honour to join with me in my commission, and I received some excellent and intelligent answers from many of the members to the queries of the Board; particularly from Mr. Hawkins, of Highbury; Mr. Edmond Andrews, of Modbury; Mr. Thomas Cornish, of South Allington; and Mr. King, of Dean Prior. From Mr. Charles Tozer, Surveyor at Broadhempston, I received very great and valuable assistance.

I cannot help here adding a circumstance which afforded me much pleasure, namely, that the yeomanry of the country, who are remarkable for their loyalty and affection to their Sovereign, not only entertained a most grateful sense of his Majesty's gracious attention to the interests of Agriculture, by the establishment of the Board of Agriculture, (from the exertions of which they indulge the most flattering hopes of very important improvements) but also, that with a spirit and unanimity that cannot be surpassed in any part of the kingdom, they expressed their firm determination, to support the constitution of the country, as by law established, with their lives and fortunes.

SECT.

SECT. X.

DISTRICT II.

WESTERN DISTRICT.

THE Western District I have made to include the la
rising immediately above the South Hams, towards the D
more Hills, including the extensive Forest of Dartm
This district is very extensive, and all that part of it im
diately joining the South Hams consists of very good
fertile land, particularly a great part of the parishes of B
Buckfast Leigh, Dean Holne, Buckland in the Moor,
part of Widdecombe. As you proceed further towards
forest, the soil is thin and poor, and you lose, almost wh
that strong loam which forms the characteristic of the so
ern part of the county. Holne, Buckland, and part of
Vale of Widdecombe, form, perhaps, the most beautiful h
land country in England; particularly along the bank
the Dart, towards the delightful retirement of the late
Ashburton, and the charming cottage of Mr. Bastard.
These places well deserve a particular description; but
were to indulge in describing all the pleasing scenes in
county, it would swell this little sketch into volumes. T
here, do very well, of all sorts; and Mr. Bastard, whose
ation is high and not a little exposed, has planted a great n
which thrive luxuriantly. A great deal of the soil of his p
is of the light black kind of soil found further towards
moor, which he has brought into an exceeding good sta
cultivation. This gentleman has watered a great dea
ground, which answers admirably well. Proceeding in
course from the town of Ashburton, and leaving Holne
Buckland, you ascend into a country very different from
which we have hitherto been describing. About five

from Ashburton, you ascend the summit of one of the Dartmore hills, from whence you have a view of the Forest or Chase of Dartmore, which, excepting a few small cultivated spots near the meeting of the two branches of the river Dart, presents to the eye a vast extent of mountainous waste, covered with rocks and heath, with scarcely a house or a tree to relieve the scene. To those who can admire Nature in her grand and unadorned scenery, the magnificent *tors*, which appear like so many ancient castles, the rude remains of other times, the bold outlines of the mountains, towering to the skies, will compensate, in some measure, for the want of verdant meads and cultivated fields.

To those who have the interest of Agriculture and of their Country at heart, far from averting their steps from such a scene, it becomes infinitely more interesting than all the beauties of high cultivation and finished improvements; and as to a Board of Agriculture, the great national object of settling and cultivating the waste lands, must be a primary object, I shall be forgiven if I dwell on this subject at some length.

SECT. XI.

FOREST OF DARTMORE.

THE Forest of Dartmore, it is well known, is a parcel of the Dutchy of Cornwall* belonging to his Royal Highness the Prince of Wales.

As

* In the General View of the County of Cornwall, which I have drawn up for the perusal of the Board, I have given a short account of the various manors belonging to the Dutchy of Cornwall. The information there stated, is chiefly derived from a book published in the last century by Sir Philip Dodderidge, which I have since found, from a conversation

As there are many circumstances respecting the rights of his Royal Highness in and over this forest, and many claims respecting new takes, and rights of common, which are not entirely settled or decided, it would be improper, perhaps, to enter here into any discussion respecting them. It will be sufficient to shew, that in its present state, this extensive tract of land is productive of little profit to the illustrious Proprietor, or to those who claim rights of common over it, and that it would be for the reciprocal interests of all concerned, that these common rights were extinguished, by granting and accepting of specific allotments, in lieu of these undefined claims and privileges. In order to shew this more clearly, it is necessary to premise, that the extent of Dartmore is not accurately known, no actual measurement, that I have heard of, having been made of it. It is in general supposed to amount to nearly 100,000 acres. I shall state it only at 80,000 acres, which, from every observation I could make, does not appear to me to be beyond the truth. In this are included, certain ancient tenements, held by copy of court-roll,

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versation with the Deputy Surveyor-General of the Dutchy, is very inaccurate, and which will of course be either corrected, or wholly omitted by the Board, before the Survey is published. In particular, I find that the revenue from the *lands* of the Dutchy in the reign of Henry VIII. was not so great as is there stated; and I have reason to believe, that the *land* revenues of the Dutchy have since that period been more considerably increased than I had been led to imagine.

I hope it will not be understood by the Board, that even any inference which might be made from such a statement, was intended to convey the most distant reflection on the gentlemen who have the management of that department, for whose worth and abilities I entertain the highest respect, and of whose condescending and active attention to every measure proposed for the improvement of the Dutchy, I have had the honour to receive, on all occasions, the most convincing proofs; and particularly in respect to the improvement of the Forest of Dartmore; the means of bringing about which has, for some years past, been very much the object of my investigation, and which, I flatter myself, will appear to the Board to be an object of great national importance.

roll, to the amount of about thirty-five, or thirty-seven, which, with the new takes, claimed in right of these tenements, are estimated to amount to from six to ten thousand acres. As far as I could judge, they do not exceed the latter computation. The remaining part of this tract is wholly uninclosed, and depastured by sheep and cattle belonging to various people, in the adjacent districts of the county. One part of the stock consists of sheep and cattle sent by the tenants in the adjoining parishes, who claim a right of common on the forest, subject to the payment of a small acknowledgment to the Prince. Another part of the stock, amounting to fully one half, consists of sheep and cattle, for which people who have no right of common on the forest, pay an acknowledgment to the Prince, and, to his lessee or tenant for taking care of them. Those who have a right of common, are called venville tenants, and pay an acknowledgment of three-pence a year for as many sheep as they chuse to send, and subject to the drift, paying two-pence a head for cattle. It is customary for the lessee of the forest to take from those not in venville one shilling, or one and sixpence per head for cattle, and one shilling a score for sheep. I understand the whole revenue paid to his Royal Highness, does not amount to above forty-three pounds per annum, which certainly cannot be considered any kind of object in itself, further than it is proper to maintain the rights and customs of the forest. On the other hand, it would seem at first view, to be a great and a valuable privilege to the people in the adjacent country, to keep their cattle on the forest, for what amounts in a great measure to almost nothing. Yet when one considers the little advantage derived from pasturing stock on uninclosed grounds and commons, it will appear very doubtful, whether any considerable benefit arises to the individuals who follow this practice. In the article of sheep, I can, I think, prove it is a most unprofitable species of management, so much so, that the most intelligent farmers in the neighbourhood have given up the practice altogether, convinced from experience

that it is infinitely more profitable to keep a less stock well, on their own inclosed grounds. I have been favoured with an estimate made by an intelligent farmer, from his own experience, who occupies a large farm adjoining to Dartmore, and who possesses an extensive right of pasture on the forest.

On his first taking this farm, and for some time after, he followed the usual method of pasturing sheep on Dartmore. But finding it did not pay interest for his money, he altered his system entirely, by the purchase of good rams, keeping the same ewes; and for some years past has not pastured his flock there, but kept them wholly on his own estate.

The following calculation this gentleman has given me from his own experience, and which, from all the inquiry I have made, has been allowed to be a fair account of the profits arising on a stock of sheep kept on Dartmore, and which will answer for any greater or less number. It is necessary for those who are strangers to Dartmore, to explain, that as it is not inclosed or divided, sheep cannot be pastured on it during winter, at an average, above ten weeks each winter. Suppose a flock of 100 wether sheep, the account of their produce will stand thus:

	l.	s.	d.
Purchase of 100 wethers one year old, at fourteen shillings each, -	70	0	
Attendance three years at one shilling per week	7	16	
Three years winter keep, ten weeks each year, say thirty weeks, at three and sixpence per score each week, - -	26	5	
Allowance for deaths, five in each year, say fifteen, at fifteen shillings each, -	11	5	
	115	6	
Loss for keeping, by deaths, say ten, at an average thirty weeks, at 1s. 9d. per week, deduct,	2	12	
The expence of the flock, at four years old -	112	13	

Carrie

	Carried over	£112 13 6
At four years old they will sell for 17s. each, say eighty-five, at 17s.	£ 72 5 0	
Suppose they will cut 7lb. of wool each, per annum, say 100lb. for three years, 2,100lb. at 6d.	52 10 0	
	124 15 0	
Loss of wool by deaths, say 10 for three years, 210lb. at 6d. deduct	5 10 0	119 5 0
Profit in three years on this flock,		£ 6 11 6

The sheep on Dartmore are very subject to the scab, which is very expensive in curing, besides being attended with loss of wool, the chance of which is not taken into the account; so that, on the whole, not more can possibly be made by keeping sheep there than two and a-half per cent. Winter keep is generally higher than here stated.

Mr. King, of Dean Prior, had a flock of 120 breeding ewes, which he kept on Dartmore in the summer, and in winter on his own estate. The following is an exact account taken from his own experience of the gross produce of his flock, kept on Dartmore in the summer, and wintered on his own estate, and of the produce when kept entirely on his own estate.

Produce of the flock when kept on Dartmoie, the wethers kept till four years old.

	£.	s.	d.
Fifty-five ewes fed off, and sold, on the average, at 16s.	44	0	0
Fifty-five wethers, at 1l. 6s.	71	10	0
Produce of, per annum,	115	10	0

	£.	s.	d.
Brought forward	115	10	0
His present flock kept on his own estate the whole year round, say 120, as before stated.			
Fifty-five ewes, sold annually at 1l. 10s. each, -	82	10	0
Fifty five wethers, at 40s. each, at two years old,	110	0	0
	192	10	
Actual profit on the produce of a flock, consisting of 120 ewes, in favour of not keeping a flock on Dartmore, - - -	77	0	0

This very great profit, arising to Mr. King, from keeping his flock on his own estate, instead of keeping it on Dartmore, arose certainly from improving his breed, by the purchase of good rams; but it is necessary to state, his flock, when kept on Dartmore, was the very best sort that can be kept there. Both are entirely of the breed of South Devon knott, or polled sheep. Of the Dartmore flock, he could not sell his wethers until four years old, but of the flock on his own estate, by being able to sell the wethers at two years old, he was enabled to keep twenty ewes more. This additional number of twenty affords an additional product of wool, which is therefore not taken into the above account. The wethers also upon his estate being sold at two years old, the chance of dying is less than keeping them four years. To these profits must also be added what is very considerable, the improvement derived to his land from the dung of the sheep, which adds every year greatly to its fertility.

I had many conversations on this subject with the Dartmore farmers, and although at first they were of opinion that vast benefits were derived to the country from the right of common on the moor, yet, whenever I have prevailed upon them to calculate their own actual profits, they were obliged

obliged to, confess what is the truth, that sheep kept on Dartmore do not improve; and that when you sell them off, they do not pay, even with their wool, common interest for the capital employed.

From these facts it appears evidently, that it would be more profitable to the farmers adjoining Dartmore, to keep a few sheep well, upon their own inclosed lands, than, to keep a great number, and send them to summer on Dartmore; and that in truth, those rights of common on Dartmore, as far as respect sheep, are by no means profitable to those who exercise them; and that a good farmer would not make use of them, even if he had it in his power. To Mr. King's evidence on this subject, I have leave to add Mr. Ball's, of Berry Pomeroy. I mention these gentlemen, because they are men who have had actual experience, and in whose knowledge and integrity, the gentlemen of the country and tenants have the utmost confidence. The little profit that is to be derived from keeping sheep on Dartmore, is apparent in another way, and that is, from the small number that are sent to the forest in proportion to its extent. The south and east quarter are the driest and best for sheep, and from the most accurate information I could obtain, there are not five thousand sheep kept on both these quarters. Certainly not so many on the north and west. So that if we say 10,000 sheep for the whole of Dartmore, we shall be beyond the mark. I think there are not 8,000 in the whole forest in any summer. Many of these are the small horned sheep, which neither in wool nor carcass are equal to the polled or knott, of which we have made the estimate. It is necessary to observe, that no sheep are bred on Dartmore, and that the small horned sheep about Okehampton, which go by the name of Dartmore mutton, are only the small Dorsets, which are kept until four years old, and fed on the low grounds. The mutton is very well flavoured; they weigh about twelve pounds a quarter. With regard to the

advantage

advantage of keeping cattle on the forest, I do not find there are many who consider it as any sort of advantage. There is a certain astringent quality in the pasturage, that disagrees with cattle; and also in some degree, but not so great, with sheep. It arises from the vitriolic acid which prevails in pastures in uncultivated grounds, or from the poorness of the natural grass; and occasions the cattle and sheep feeding there to become hide-bound and costive—what is called the *moor-cling*. It is cured by removing them to the low grounds, or giving them drafts of red loam, mixed with water: lime-water will have the same effect, by correcting the acid in their stomach.

The chief use that is made of the rights of common for cattle, is to pasture bullocks for carrying home their turf, which is very useful to the people in the northern and western quarters, who are at a great distance from coals. Turf is an expensive fuel, and it is to be hoped that some of the canals which are proposed to form communications towards Tavistock, from the Northern Sea, and towards Hatherleigh, from which branches may be extended to the neighbourhood of Dartmore, will supercede the necessity of their resorting to turf for fuel. In the mean time, however, the turf on Dartmore is a great comfort to the neighbouring poor, and the most considerable advantage they derive from the forest, and which, certainly, in any plan for improving the forest, would be carefully preserved for their use. There are still many who send cattle to pasture on the forest, particularly in very dry summers, when their low lands are short in grass; but the reasoning we have held, respecting stocking with sheep, applies in every respect with more force to cattle. The best farmers send none.

I have dwelt on this subject, at some length, as they are facts which came immediately under my own observation. I am persuaded, that the same reasoning might be

applied

applied to the other very extensive wastes, both in this county and Cornwall, and, I have no doubt, in every part of the kingdom.

I think I have established the position with which I set out, to shew that Dartmore, in its present state, is of very little profit to the illustrious Proprietor, to the tenants in common, or to the community at large; and may, in the strict sense of the word, be denominated waste land.

I shall now endeavour to submit to the Board, with as much precision as I am able, the result of my investigations, respecting the practicability of rendering this tract of land an additional source of wealth and force to the nation. Here I have found a great weight of prejudice to encounter. Not aware of the slow progress of internal improvement, in a maritime and commercial country, people are apt to imagine, that if this tract of land were capable of cultivation, it would have been cultivated long before this time. Others, again, viewing the rude aspect of the ground, abounding with bogs and rocks, are inclined, from aversion to new experiments, from indolence of temper, and from ignorance, the source of all prejudices, to treat every proposition of improvement as the airy vision of a sanguine projector.

Happening, some years ago, to be a melancholy spectator of an embarkation from one of the western isles of Scotland, of some hundreds of the inhabitants, in a ship bound to America, to cultivate lands in an unhealthy climate, and to undergo hardships of which these poor people were little aware, I could not help entertaining a wish, that some of the numerous tracts of waste lands in England, were offered to the industry of men accustomsd to be contented with little, provided that little they could only call their own. The success which has attended the worthy Mr. Dempster, at Skibo, in Sutherland, and Mr. Drummond, in clearing his extensive morass in Stirlingshire, by encouraging the industry of these people, led me to think that by establishing a colony on Dartmore, under the patronage of its illustrious Proprietor, a fair expe-

experiment might be made, of the utility of extending su
system. I had marked out in my own mind, various
ations on the streams of Dartmore, where villages might
advantage be erected, where a number of families, with
aid of a little ground for potatoes, flax, and corn, and a
sheep and cows, could procure by industry, to which
are already accustomed, an easy subsistence under a b
climate than their own.

On this idea, which is, perhaps, more pleasing than p
ticable, does not, however, alone rest the possibility of set
and cultivating Dartmore. The climate of this district, w
may properly be stiled the Highlands of Devonshire, is
commonly healthy, and the air remarkable for its pu
Until lately, without houses of entertainment, almost wit
roads, abounding in rivulets, which, in time of floods, s
suddenly into formidable rivers, this part of Devonshire
long been considered as an unhospitable desert. Stran
were anxiously warned to avoid passing over it, and a th
sand stories told of people being pillaged and murdered,
of others perishing in the floods and the snow. No
of it was attempted to be cultivated, except a few s
spots on the banks of the eastern and western branche
the Dart. Some years ago, the Honourable Mr. Ju
Buller happened to purchase several of the ancient copy
tenements, and finding that his health was greatly impro
by the purity of the air, he built in this wild but roma
situation, a plain but a very comfortable and commod
dwelling, and sought for exercise and amusement, in
praise-worthy and rational pleasures, of endeavouring to in
duce cultivation into this neglected and almost desert co
try. To the little colony he has assembled around him,
behaves like a parent and a friend. Having no place
divine worship in the whole of this extensive tract, he ass
bles them for that purpose, every Sunday, at his own hou
he settles all their little differences more like a friend tha
judg

judge; and his advice and protection are always ready at their call.

To the strangers, whom curiosity or love of the rural arts induce to visit this sequestered spot, the hospitalities of Prince-Hall are always open, and exercised with that affability and politeness which excite the highest veneration towards the learned owner, and reflect honour on the illustrious personage whose name this hospitable mansion bears. While the learned judge is in the country, his house is the constant resort of men of enterprize and experience in the science of agriculture, from every part of the kingdom. Dartmore has by this means become known to men accustomed to speculate on the improvement of waste lands, and the judge spares no expence in making experiments to meliorate the soil and pasture, and in procuring such breeds of cattle and sheep, as may be thought more likely than the native breeds of Devon, to answer in this mountainous part of the county. He has lately introduced the South-Down sheep, and the small Scotch breed of cattle. But there has not yet been time sufficient to form any judgment of the result. He has found much difficulty in draining the land; a great part of it consists of a peaty substance, which holds the water like a sponge, and which it seems almost impossible to render dry without the pressure of some heavier substance, or an intermixture with something which wou'd open its pores, and afford a free passage to the internal moisture. As it has been said, that Nature has provided, in every climate, medicines which are fitted to cure the diseases to which mankind are subject therefrom; so it is by many agriculturists held, that in all lands there are to be found certain substances, which, by means of human industry, will be found correctives of the unfertility of the soil. I am inclined to believe there is much truth in this opinion, and have no doubt that something of this sort may be found in Dartmore. Lime and sea sand, both of which, particularly the last, would be an

excellent manure for Dartmore, are at so great a distance as to render the last impracticable, and even the former is to be procured only at an expence scarcely to be paid by the returns. Mr. Justice Buller, and Mr. Sanders of Brims, another of his Royal Highness's tenants, have erected kilns for the purpose of burning peat for manure, which experiments are likely to be attended with great success. In the higher parts of Dartmore, on the north and west, are to be found vast tracts of wet boggy land, a great part of it containing a great depth of this spungy turf, on which a succulent benty grass grows in the driest summers. Around the very highest *torrs*, where the sheep are accustomed to go for shelter, you see the finest species of the sheep's fescue and the white clover, springing up spontaneously, which decides fully the advantages which would arise from properly stocking and folding with sheep. Whoever has seen the change that has taken place in the bleak mountains in the Highlands of Scotland, and particularly in Argyleshire, where the stocking with sheep has changed the brown heath into the verdant green, need not doubt that much might be done with Dartmore, under so much warmer a sun; and the height of which is nothing in comparison to the mountains to which I allude. In those parts of the forest where this turfy soil does not predominate, the upper soil is thin, black, and light; the substratum a yellow or pale red clay, mixed with sand and gravel. This black earth, when mixt with lime or dung, produces good crops, particularly potatoes, which are no where more excellent. It also produces very good black oats, wheat, and turnips. It sometimes happens, however, that although the corn looks well, it does not fill up towards harvest, and becomes what is called a deaf crop. This, I am informed, is found also to take place on a similar kind of soil found in the Mendip Hills.

Dartmore, although denominated a forest, cannot boast of being much covered with wood. The only remaining natural

tural wood is what is called Wistman's Wood, near Crockern Torr, the seat of the parliament of the Stannaries. This singular wood, of huge decayed stumps of trees, is amidst a number of loose rocks of granite. It is curious to observe the roots of these trees creeping over the rocks, and forcing themselves between them in search of nourishment; while on their decayed tops, thorns, brambles, and other shrubs, (the seeds of which being brought there by birds, have found a nidus) are beheld shooting forth, forming altogether a most grotesque appearance.

Mr. Justice Buller, to whom I must recur for every experiment to improve this forest, has been very unsuccessful in his first endeavours in planting. Nearly 40,000 trees, consisting of larch, and other firs, intermixed with other trees, which he planted in a field near Prince-Hall, have almost wholly perished. The great expence and miscarriages experienced in the first attempts to improvement, are as worthy of notice as those which are successful. Mr. Pread, of Trevethoe, who is truly the father of planting in the west of Cornwall, informed me, that he brought 170,000 trees from his own estate in Gloucestershire, and planted them at Trevethoe. The whole of them failed; but by repeated experiments, conducted with judgment and perseverance, he at last succeeded, and has shewn an example, which is now very generally followed in the western part of that county. It is a fortunate circumstance for the improvement of a country, when it happens to be undertaken by men of large fortune, who have the true spirit of improvement, and are not easily turned aside from their enterprize by want of success. I have the best hopes, that the public spirited endeavours of Mr. Justice Buller, to introduce improvement into the Forest of Dartmore, will be attended in the end with the success they so justly deserve. In my humble opinion, the illustrious Proprietor of the forest, and the public at large, are under very high obligations to a gentleman of his rank

and fortune, who devotes so much of his attention to the improvement of a tract of country hitherto so extremely unproductive; and I am fully persuaded, that if general cultivation should take place on Dartmore, it will be wholly owing to the exertions of this gentleman, who, I hope, will receive every aid and encouragement to proceed, from those interested in the cultivation of this tract of country, and from the Board of Agriculture, one great object of which seems to be the cultivation of the waste lands of the kingdom. To hold out to any of the parties immediately concerned in the partition of this tract of common land, extravagant expectations of profit from the different allotments that might be made to them, in lieu of their respective rights, would be idle and absurd. Every one who is acquainted with the expence of the cultivation of waste lands, must know, that the expences incurred in inclosing, draining, &c. are often equal to the price of the fee simple of lands already improved. If navigable communications should be formed, from this waste to the adjacent coasts of the sea, which is far from being impracticable, the value of these lands would be greatly enhanced.

I would not presume to desire, that my sentiments should be relied upon, on such an occasion, and I have never publicly ventured to give any decided opinion upon the probable value to which Dartmore might be improved, at a moderate expence. I shall only say, that if such a measure should take place, I have no doubt that people will be found, ready to speculate on making improvements, at greater advantage to the proprietors of allotments, than people who even know Dartmore best, in general expect.

Sufficient it is for the Board to be convinced, of the propriety of these lands being divided and allotted; to see, as I flatter myself has been proved, that in their present state they are unproductive to those concerned, and to the public, and wholly incapable of being improved while they remain in this

this situation; and that there is a fair prospect of these lands being improved to some advantage, by their being taken out of that undivided state. It is proper here also to add, that this country contains many valuable mines of tin, the working of which will afford much employment for the settlers. At present they are carried on at considerably greater expence than they would be, in case the country was settled and cultivated; as the tinners are not allowed, on account of these common rights, to cultivate the grou d, even for potatoes or other vegetables, which form a considerable part of their subsistence; which circumstances are a great check to the spirit of adventuring in the mines of Dartmore.

On Dartmore the ancient tenants have hitherto exercised a privilege which is supposed to be peculiar to this forest. The ancient tenements are, I believe, about thirty-seven and a half tenement. Thirty-five of these are considered by the proprietors to be entitled, upon death or alienation, to a new take, and which it has been customary for the reeve and homage jury to set out, upon application made to them for that purpose.

These new-takes, so set out, are, in general, from between twenty-four to thirty acres; and, sometimes, if there is much bog or rock, they are even more. For these, the fees to the reeve and steward amount to four guineas, and a quit-rent paid to the Prince of one shilling and eight pence or two shillings per annum. These new-takes have been considered as of so little value, that they are commonly sold from one to another for ten guineas; so that in fact all that is gained by a new-take, is only six guineas. A friend of mine purchased, last year, one of them for ten guineas.

I have heard it reported through the country, that vast encroachments had been made on the rights of the Prince, by individuals making pretended sales to each other, of ancient

cient tenements, and claiming on each transfer an addition
new-take: and that in consequence of this sort of playing
shuttlecock with these copyholds, large tracts of the forest h
been illegally seized and inclosed. Upon the most accura
investigation, and the fullest evidence, I think it is but justi
to say, that the accusations which have been made of such
practice having taken place, in any recent instances, a
totally without foundation; and that I do believe the calu
nies which have been so industriously spread on that subje
originated very much in malevolence and envy.

What may have been done thirty or forty years ago, I cann
pretend to speak to. Nor do I presume to give any opini
concerning the legality of the custom of new-takes, or t
limitations which should take place in setting them out.
can only say, that it appears to me to be for the interests
the community, that proprietors of extensive wastes shou
invite settlers to cultivate the lands, by providing an e
mode of acquiring a right to inclose. And if such a custo
did exist at the time that Dartmore was disafforested, it
not improbable that it may have originated in a view of
creasing the cultivation of this tract of country. I will
further, I will venture to prove, that it is for the inter
of any proprietors of large tracts of waste ground, to inv
settlers, by alienating a part of those wastes for very sm
or scarcely any consideration, in order that thereby the
mainder may be more speedily rendered of an improva
value, which otherwise would, perhaps, not take place in a
definite term. In America, the proprietors of waste la
who have followed this system, have found great advanta
from it. In Devonshire, also, it is the late improvements
the Honourable Mr. Justice Buller that have given even
ideal value to the lands of Dartmore. I should be glad t
his Royal Highness had half a dozen more such tenants. So
hopes might then be entertained of the improvement of Da
more. I do not know any more certain way of attract
settl

settlers to Dartmore, than by laying out, in favourable situations, ground for building villages, with little tracts of land adjoining, for potatoes, gardens, and a few sheep and cows, and granting them to industrious people, on moderate terms. For this the experience of the British Society for encouraging the Fisheries, by erecting villages in the Highlands of Scotland, may be recurred to as a precedent and a guide in the plans to be followed. By erecting the forest also, as has been proposed, into a separate parish, objections respecting poor rates might be obviated, which prevent, in a great part of England, the settling of the poor upon waste lands. Abundance of fuel, a climate remarkably healthy, a soil uncommonly favourable for the growth of potatoes, cabbages, and vegetables of all kinds, would soon attract industrious settlers; and the neighbourhood of Plymouth, and the markets of Ashburton, Tavistock, Okehampton, Moreton, &c. would give them an easy opportunity of disposing of the fruits of their industry. In the skirts of the forest there are vast numbers of little farms, where the inhabitants live very comfortably, and carry their potatoes and other vegetables, their woollen yarn, and woollen stuffs, to the neighbouring markets; and living at little or no expence, they generally acquire, in a few years, a competent fortune. On the whole, it appears to me, that Dartmore might be made a fine example of public improvement; and if set about with proper regard and candid attention to the various claims made on the forest, it would not be difficult to bring about the consent of the majority of the gentlemen therein interested, to a fair adjustment of their claims. But the reverse, if the objects are not properly explained, and the business not gone about with delicacy, and a proper regard to all concerned. At the same time, it is necessary to state, that prejudices and prepossessions in favour of old customs, and the jealousy that people have of what they have been accustomed to look upon as common rights, will render it very easy for any intriguing

man

man to set some individuals against any general scheme
improving this or any other common lands. To those th
are acquainted with the temper of the people of that part
the country, it will appear very easy, by fair and open discu
sion, to make them sensible of the propriety of the measur
and, I have no doubt, to counteract any endeavours to rai
up an opposition to a measure, which may be clearly prove
is not calculated to be an exclusive advantage to any ind
vidual, but to be of general benefit to the whole.

WASTE LANDS IN GENERAL.

In the former district of the South of Devon, there are
extensive tracts of waste or common lands. In many parish
however, there are small commons, or wastes, seldom excee
ing eighteen or twenty acres. In the Western Distri
Dartmore is only a part of the extensive wastes and commo
with which it abounds. All around the forest there are v
tracts of waste lands, belonging in common to the adjoini
manors, which claim a right of venville on Dartmore.
some of these the Prince has a right to drive, and on others n
Wolkhampton Common, anciently called the Common
Devonshire, is of this description. It is said to be nearly
thousand acres, and was formerly, we are told, includ
within the bounds of the forest. Roberau Down, Bla
Down, &c. are all of them extensive commons in this d
trict. There are, besides these, several thousand acres
common near Bridistow, in the neighbourhood of which
a lime rock; which commons might be rendered good ara
and pasture land. In the more northerly districts there
much waste land, which the canals lately projected to form
junction with the Bristol Channel, will render very valuab
On the side of Teignmouth, there is an extensive commo
called Heytor Down, which might be made as good a she
walk as any in England, were it divided and inclosed; a
also Hall Down, near Chudleigh.

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From the best information I could obtain, it appears to me, that fully one fifth part of the county of Devon is waste land, which would amount to 320,000 acres; all of which, except, perhaps, some part of Dartmore, is capable of improvement. The lands near Bridistow, might easily be made worth twenty and thirty shillings an acre. The lands on Dartmore, we shall say, might be made worth seven shillings an acre. Take then 300,000 acres at ten shillings, it would give 150,000l. *per annum of additional rent*, which is more than double the whole land-tax of the county, and nearly equal to the land-tax and the sum raised for the relief of the poor, taken together.

The medium of the assessments for the relief of the poor, in 1783, 1784, and 1785, (of which 9,238l. 11s. 3d. were paid for county rates, &c.) amounts to	£82,605	14	7
The land-tax in Devon, at 4s in the pound, is	77,875	2	10½
	£160,480	17	5½

It is scarcely necessary to add, that the above mentioned rent is to be trebled, if not quadrupled, in order to ascertain the total additional produce, which cannot be calculated at less than half a million per annum.

SECT. XIII.

THE MIDLAND AND NORTHERN DISTRICTS.

HAVING said so much on the Southern and Western Districts, I shall be under the necessity of being very short in my account of these districts. The lateness of the season,

and my being obliged to go to Cornwwall, prevented m
from making an extensive tour through this part of Devon
shire, a great part of which, I am informed, is extremel
beautiful and romantic. In this part of Devonshire, parti
cularly towards the north, sea sand is chiefly made use of fo
manuring their land; for the mode of doing which, in its bes
perfection, I refer to my account of the South Hams. Tha
species of sea sand is found to be best, which contains the greates
proportion of minute shells, or coralline substances. Tha
which is merely a detritus of quartz, is not generally pro
ductive. The breed of cattle in the North of Devon is re
markably fine, and are, perhaps, the best in the kingdom
Many people prefer them to the famous long-horned bree
of Mr. Bakewell. A heifer sold there, this last season, fo
thirty guineas; and that price is not unusual for the bes
bulls. Denys Rolle, Esq. is making very great improvement
in these districts, and has had surveys lately taken, to bring
canal from Dartmore to the River Torridge. About Sout
Molton there is a district of the red loamy soil, that is foun
in South Devon. There are many excellent breeders o
sheep in this part of Devonshire. A gentleman at Bow,
am informed, paid eighty guineas for a Leicestershire ram
which has answered well.

As I expect to be able to make a tour through that part o
Devon, in the course of this summer, I hope to have it in m
power, before the publication of this sketch, to give a more ac
curate description of these districts, from my own personal
knowledge, without putting the Board to any additional ex
pence.

SECT

SECT. XIV.

CIDER.

THROUGHOUT a great part of this county, particularly the southern districts, cider constitutes a very material article of rural œconomy. Every farmer has his orchard, which supplies him, in the first place, with an agreeable and wholesome beverage for himself and family, and the surplus he disposes of to the cider merchant. The operations of the farmer in preparing his cider, are simple and easy. The juice of the fruit being extracted by means of the pounding mills and the press, the liquor is put into large vatts, where it is left to ferment; and when the fermentation is arrived at full perfection, of which they judge by the head beginning to break, the cider is then drawn off into hogsheads or barrels, and kept for family use, or sold to the cider merchant, who racks and prepares it for the London and other markets.

It is not a general practice to sort the different species of apples. Those which produce the greatest quantity of juice are preferred. The red-streak is, in general, considered as the apple which gives the finest flavour to the cider. The apples formerly were pounded in a hollow trough of moor stone, by means of a mill stone of the same, revolving on its edge. It is now pounded generally by a machine which mashes the apple much more perfectly. The apple thus mashed, is placed on the press with layers of reed between, and pressed down with a screw and lever. Of late years, many improvements have been made in this branch of rural industry, and they expect to bring it to still greater perfection.—— In the neighbourhood of Exeter, Chudleigh, Newtown, Bushell, Paignton, Totness, &c. they make great quantities of cider, which has a richer flavour of the apple than any I have tasted in other counties. In the parish of

Staverton and that neighbourhood, the sweet cider is chiefly made. This kind of cider is produced from the same species of apples as the rough cider. The sweet taste it has, arises from the fermentation being stopped by repeatedly racking off the cider from the lees. It has been supposed by many people, that cider is adulterated, by adding the juice of turnips to that of the apples. There is no kind of foundation for this report. The farmers sell the cider they do not use for the family, at eighteen, twenty, and twenty-five shillings per hogshead; sometimes the produce of an orchard is very great.—An orchard last year, belonging to Mr. Mathews near Chudleigh, consisting of three acres, made eighty hogsheads of cider, at one guinea per hogshead. Several gentlemen plant nurseries for apple trees, and give the plants to any of their tenants who will engage to inclose a piece of land for an orchard. This is a system well deserving the notice of all the proprietors in the county.

SEED-TIME AND HARVEST.

SEED-TIME for wheat is the beginning of October, and from that time to the end of November. November is considered by many as the best month for sowing wheat.

The mildness of the winters in this county, does not render so much attention to winter fodder necessary as in other counties: they therefore generally eat their turnips off by the end of February, and sow their barley and oats immediately, or early in March.

HARVEST is generally from the end of July to the middle or end of August, but much depends on the season, situation, good or bad husbandry, &c.

POPULATION.

TEMPLEMAN'S Survey states the inhabitants of the County of Devon to amount to 340,000. I am inlined to think that the

the population at present is not much under 400,000. Templeman makes the number of houses, in his time, to amount to 57,000 Surely the number of houses must since that period be greatly increased. In the town of Dock alone, there is an addition of nearly 3000 houses. In Exeter, Barnstaple, Crediton, Tiverton, Taunton, and other towns, a great addition is made to the number of houses. We shall estimate in the whole, that the increase of houses is only 10,000. Taking it only at six persons to a house, it will amount to 60,000 additional, of which Dock alone contains 25,000. In the towns, two, and sometimes three families live in one house. In Totness they average seven to a house; in Dock between eight and nine to a house. There are no less than 472 parishes in the county, including 19 in the city and county of Exeter. It is evident, however, that this county is far from being overburdened with population: in the southern parts in particular, labourers are very scarce.

By the improvement of the waste lands, by the introduction of manufactures, for which their numerous streams afford great opportunity, a very considerable additional number of people might be employed; to say nothing of the mackarel and herring fisheries, which might still further add to that number; nor of the mines, the numbers employed in which are daily increasing, and the produce, particularly that of tin, has been of late very considerable.

CONLUSION OF THE SKETCH OF THE AGRICULTURE OF DEVON.

THE great extent of this province, the variety of soil and situation of hill and dale, afford opportunity for introducing almost every species of grain and grass that is found to be of advantage to any other part of the kingdom. There is also no part of the kingdom, that affords better opportunity for rearing or fatting any kind of cattle or sheep. In speaking so highly, as

I have,

I have, of the native breeds of cattle, I do not wish to rende
the people entirely contented with trying only to improv
their native breed. Their climate and pasture are certainl
equal, if not superior to any county in England; and whil
they should endeavour to improve their own breeds, it will b
right to try others, and they will then have a fair opportunit
of judging, which of the breeds are most profitable to be pro
pagated. The culture of cabbage plants, is a great branch o
traffic in the parish of Paignton, and hops are cultivated wit
advantage in many parts of the North of Devon. Hemp an
flax very likely would be profitable crops in many situa
tions. On Dartmore, flax in all probability would answe
well. Potatoes on this and other wastes lands would gro
in great plenty, and of uncommon excellence.

In my Survey of Cornwall I have stated the advantag
arising from cultivating potatoes on a large scale, as a farm
ing crop; and I have just mentioned a discovery, which,
was informed, had been made by Doctor Cuthbert Gordo
of reducing the potatoe to flour or meal. I am since inform
ed, that the process is so productive, that one acre of ordina
land under potatoes, will afford four times the quantity
flour which can be produced, on the same quantity of the be
land under wheat, and at a considerably less expence; and th
this flour will keep much longer than the flour of wheat,
it is impervious to the air.

It is a common practice in Devonshire, to make bread
potatoes mixt with flour, which is very sweet and pleasant
the taste. This is done by simply mashing the potato
after they have been boiled, and mixing them with the flo
or leaven. But to reduce potatoes to a flour or meal that w
keep for upwards of seven years, has not before been disc
vered, and has long been one of the greatest desiderata in t
arts.

The public importance of such a discovery is beyond
calculation. Every one is sensible of the immense advantag
whi

which have arisen to these kingdoms from the use of the potatoe. But if this discovery should hold good, it will totally prevent the loss of potatoes by waste, and consequently render them much cheaper. It will do more, it will put the possibility of famine, not only out of the question, but render the subsistence of the inhabitants of these kingdoms so abundant and certain, within the kingdom itself, that we shall not have occasion for those immense importations of grain which are held to be necessary, at present, for the supply of this great manufacturing and commercial country. This discovery, if even accompanied with part only of the advantages which have been stated to me, will reduce the price of grain so much, that some might be afraid that it would render the poor idle. A moment's consideration, however, will show the futility of any apprehension of that kind. Grain is the standard of the price of every thing. If the price of grain is reduced, the price of labour will also be reduced. Agriculture, manufactures, and commerce, will then be carried on with a less capital; while, at the same time, we shall be able to supply foreign markets at a lower rate, and consequently increase the demand for our produce, and render rivalship with us still more difficult.

Viewing this discovery in such a light, it appeared to me unaccountable, that Doctor Gordon, if he had actually made such a discovery, had not been encouraged to make it public. But it is well known, how very difficult it some times is, to excite attention to what is new and uncommon; and there is every reason to believe the account which this gentleman gives, of his having fully ascertained this important discovery, and that he has no intention to impose on the credulity of the public, of which his other valuable discoveries afford the fullest evidence.

Some years ago, Dr. Gordon exhibited the bread he had made, in this way, from potatoes, to the Highland Society of London, who highly approved of it, and voted him their thanks;

ex-

expressing, at the same time, their wish, that he should make it public. The Secretary of that Society, having fully ascertained the fact, and sensible of the great advantage that would arise from it to the inhabitants of the northern parts of Scotland, who are often reduced to the greatest distress in the spring and summer months, between the time of the old crops of potatoes being gone and new ones being fit for use, strongly urged Doctor Gordon to make it public.

Very fairly considering that the publication of so important a discovery, is a claim to public reward, and having been as yet unsuccessful in his applications to Government for remuneration for improvements he has invented in the art of Dying, he has hitherto declined publishing his process of making flour of potatoes.

The French have been so sensible of the importance of such a discovery, that large rewards have been publicly offered during the late King's reign, for discovering the art of making flour from potatoes; and there is no doubt, that at present they would give almost any reward to be made acquainted with such a process.

I cannot help earnestly wishing that this matter should be taken up by the Board, or by some individual, who might have sufficient influence with Government, to obtain a reasonable reward for the author of such a discovery, on condition of the merits being fully proved, and the process rendered public.

No. II.

THE Flocks in the Western Part of England being very subject to the disease called the Goggles, &c. the following Remedy for it, which comes from a respectable quarter, is recommended to the Reader's attention.

RECEIPT FOR CURING THE WOOD EVIL, FROG ILL, RICKETS, GOGGLES, OR SHAKING IN SHEEP.

THE disorders in sheep have been so little attended to, that it is difficult to learn the names of them; and when the names are obtained, they are, in different counties, applied to diseases accompanied with such very different symptoms, that unless the nature of the disease be previously described, any receipt may be as useless or injurious in one county as it is beneficial in another.

The disorder for which the following receipt is recommended, is a weakness and perfect debility in the loins; which, in different counties, is called by the names above mentioned. But shaking does not seem to be at all applicable to it, because the sheep is affected with no symptom of that kind. The goggles is a disease which affects the head, and is occasioned sometimes by a worm, and sometimes by water. In time, it makes the sheep turn always on one side, and gives the appearance of the whole side and loins being affected; but the seat of that disease is in the head. The frog, or hoof of the sheep, is not at all hurt, and therefore I would wholly reject the name of the frog-ill, for the present. The rickets, as descriptive of the disease known under that name amongst children, is accompanied with a weakness in the loins, and therefore may be applied to the present complaint; but as that name denotes other ailments also, I would affix the name of wood-evil only to the following disorder:

In the winter 1792, I had a sheep, which apparently had lost the use of his hinder legs: if raised from the ground he could not stand; and my shepherd, bailiff, and workmen, agreed that he was past all recovery, and must die very soon. Under these circumstances it was impossible to do any harm; and, recollecting, that for some time past, the nights had been very cold and wet, I concluded that the sheep was chilled and benumbed; therefore I blooded him, and prepared the following medicine:

Take penny royal, wild scabeous, and shepherd's purse, of each half a handful; bruise them well, and boil them in three pints of ale; then strain off the liquid part, by hard squeezing and pressing the herbs; add cumrain seeds, fennugreek seeds, and carraway seeds, of each one ounce, and of London treacle two ounces: put these in a bottle and stop it close.

I gave the sheep nearly half a pint in the afternoon; the same quantity in the morning and evening of the next day, and the remainder of the bottle on the day after, when the sheep got up, walked away, has ailed nothing since, and has been fatted.

The medicine is not the worse for keeping, and will be found useful in many sudden complaints: but if given for a fever, omit the carminative seeds.

May 31, 1794. A. B.

GENERAL VIEW

OF THE

COUNTY OF CORNW

arginal obsurvations on the
County of Cornwall
hereunto annexed,
were made by
William Molesworth Bart.
of Pencarrow in the
county of Cornwall.
and
given to the under Secretary
for the information
of
The Board of agriculture
in
1796.

GENERAL VIEW

OF THE

COUNTY OF CORNWALL

WITH

OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

BY ROBERT FRASER, A. M.

DRAWN UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULTURE AND INTERNAL IMPROVEMENT.

LONDON:

PRINTED BY C. MACRAE.

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no.3

TO THE READER.

IT is requested that this paper, may be returned to the Bo
Agriculture, at its Office in London, with any additional re
and observations which may occur on the perusal, *written*
margin, as soon as may be convenient.

It is hardly necessary to add, that the Board does not co
itself responsible for any fact or observation contained in th
port, which at present is printed and circulated for the pu
merely, of procuring farther information respecting the husb
of this district, and of enabling every one, to contribute hi
to the improvement of the country.

The Board has adopted the same plan, in regard to all the
counties in the united kingdom; and will be happy to give
assistance in its power, to any person, who may be desirous
proving his breed of cattle, sheep, &c. or of trying any
experiment in Husbandry.

LONDON, MAY, 1794.

GENERAL INTRODUCTION

TO THE

SURVEY OF THE COUNTIES

OF

DEVON AND CORNWALL.

THE Board of Agriculture and Internal Improvement having, in some measure, left the general arrangement of investigation, and the scheme of the subsequent Report, to those employed in the respective districts allotted to them, I felt my attention naturally directed, in the first place, to a general view of the leading features of the ancient kingdom of Dunmonium. *

Notwithstanding the advantages of these countries, in point of climate, their local situation led me not to expect an equal advancement, with many other parts of the kingdom, in those new improvements in the

* It is well known, that the kingdom of Dunmonium comprehended the extensive and valuable district of Devon and Cornwall. The name is derived from the tin with which these counties singularly abound.

the rural arts, which have of late years excited so much zeal and enterprise in the more internal parts of the kingdom.

From their maritime situation, which of course directed their attention to the fisheries and to commerce, their distance from the great mart of the metropolis, their possessing few very large towns, and these towns well supplied with fish, it is not to be wondered at, that the industry of the inhabitants is not so much directed to the improvement of their breed of cattle and sheep, or that they will so readily perceive the advantage of such improvements, as those who live within a nearer circuit of Smithfield market.

The ocean, that great object of attraction to English enterprise, and the spirit of adventure so congenial to the human breast, seem, in these counties, to have attracted the inhabitants towards the sea-shore. The mines, and not agriculture, have peopled the situations remote from the sea.

The internal parts of the country have remained hitherto uncultivated, and present to the view immense tracts of uncultivated wastes and undivided commons entirely in a state of nature, and, excepting the mining districts, almost without inhabitants.

The admiration of a stranger is naturally excited by observing, in a country so anciently settled as

Dunmonium

Dunmonium, that cultivation has proceeded so short a space from the coasts of the sea, and not been pushed farther to supply the channels of commerce, which would seem most naturally to depend on internal resources.

Retrograde as is the actual order of things, it has happened in most countries of Europe, that commerce has been the first object of attention. Agriculture and internal improvements follow slowly in her train, and late employ the superabundant capital collected by the wandering sailor from various climes.

To accelerate this progress, and to point out proper objects *at home* for the employment of this superabundant wealth, has long engaged the assiduous attention of the gentleman to whom the public are indebted for the plan of this excellent institution; and if I shall be able to point out any circumstances to the Board that may lead to the farther extension of the internal improvement of the districts I have had the honour to survey, I hope that it may make up for any report containing less of minute detail, which the extent of these counties in a great measure precludes me from being able to comprehend in this Survey.

The very inadequate sketch of these extensive counties, which these pages contain, will, I hope, meet with the candid consideration of the Board.

Sufficient recompence will be made even for its omissions or errors, if it shall be the humble instrument of calling forth the pens of some of the many able and well informed individuals who inhabit those parts of the kingdom.

CORNWALL.*

SECT. I.

EXTENT.

CORNWALL is the most westerly county of Britain. It extends also further to the south than any other. The latitude of the Lizard Point is 49 deg. 57 min. 30 sec. which is 11 min. 30 sec. farther south than the Start Point, the most southerly head-land of Devonshire.

Cornwall is almost an island, wholly surrounded by the sea, except where it is joined to the county of Devon, which boundary, from Morwinstow on the north, near the source of the Tamar, to the Ram-head on the south, forms a line of about forty-three miles. From this boundary to the westward, the land continually decreases in breadth, forming itself into a figure resembling a cornucopia; having the Bristol Channel on the north, and the British Channel on the south, both seas meeting, in a manner, in a point at the promontory called the Land's End, on the west.

From the widest part, extending from the northern point of Morwinstow to the Ram-head, the land decreases so rapidly, that for about one-third of the length of the county, from Padstow, on the north, to Fowey, on the south, it is only eighteen miles in breadth. Proceeding about another third, it is thirteen miles from Pendinas Casle, on the south, to Portreath, on the north; and from Mountsbay, on

* The county of Devon will be given in another Report, which will be separately printed. It was thought more adviseable to begin with Cornwall, being at the extremity of the island.

the south, to Saint Ives and the Bristol Channel, on the north, the land is only five miles wide.

From Morwinstow, to the Land's End, the two most distant points, in a direction nearly south-west, and north-east, Cornwall measures, by Martyn's map, seventy-eight miles and a half.

It contains nine hundreds, and two hundred and one parishes.

By an accurate mensuration, made from Martyn's original surveys, and obligingly communicated to me by his nephew, the Reverend Mr. Hitchins, * the number of acres are as follows:

Names of the Hundreds.	No. of Acres.	Land Tax.
Powder,	128,115	£.6,003 7
Kerrier,	89,051	3,298 1
Penwith,	90,957	2,998 8
Pydre,	92,713	3,075 11
Trigg,	54,574	2,193 18
Lesnewth,	61,132	1,779 8
West,	81,558	3,741 2
East,	112,647	6,532 3
Stratton,	48,934	2,320 19
	759,681	£. 31,943 1
Part of the parishes of Saint John, and Maker, are in Devon, therefore subtract	1,197	

Total, in Cornwall, 758,484 acres.

GENERAL CIRCUMSTANCES OF THE COUNTY.

The land of this county stretching itself out in the form of the narrow peninsula we have endeavoured to describe

* Mr. Hitchins intends to republish the Index Villarum of Martyn, work extremely useful in this part of the country.

is high and mountainous in the center, and declines towards the sea on each side.

On the sea shores and the vallies, near the banks of the great rivers, are the chief and almost only seats of cultivation. The higher grounds exhibit, in many parts, the appearance of a dreary waste. The roads of communication with the neighbouring country pass chiefly through these higher grounds, or large and extensive commons, and exhibit to the traveller a rude prospect which impresses him with a more unfavourable opinion of this county than it in general deserves. For although the higher lands have little to please the eye, the number and variety of beautiful and well wooded vallies, left me only to regret that the season in which I visited them did not allow me to enjoy their beauty in full perfection. While the strata of the rich and fertile soil, with which the lands of this county frequently abound, invited a more minute examination than my time could possibly afford.

Not only in the vallies, on the sea coasts and great rivers, but in almost all the low and flat grounds, in more inland situations, are to be found strata of marl, rich loams and clays, which, being alternately intermixed, and with poorer soils, afford an extensive field to the industry of the inhabitants of this county, and open resources for the cultivation of their waste lands, which afford reason to expect, under the patronage and enlightened views of improvement which may be afforded by the Board, effects of great importance to that country, and to the community at large.

Cornwall possesses the happy advantage of a numerous and public spirited body of gentlemen, who are alive to the improvement of their native county. The people of Cornwall also possess a great degree of perspicacity and acumen; they attend to new improvements: if they find them successful, they are not slow in imitation.

SECT. II.

MINES.

CONTEMPLATING the general circumstances re
specting this county, the mines with which it abounds, an
to which so great a part of its capital and industry is di
rected, seem in the first instance to present themselves to in
vestigation.

Nor is this branch of employment unconnected with th
agriculture of the country.

The adventuring spirit of digging into the bowels of th
earth may be considered as counteracting, by the temptin
hopes of sudden gain, the slower but more certain advan
tages of cultivating the soil.

In another view, an extensive market is by this species c
industry afforded to the neighbouring husbandman, sup
plying, in that remote country, the want of great and popu
lous cities.

A further inquiry may be also instituted, and in man
respects curious and interesting, whether the capital or stoc
employed in carrying on the mining business affords a pr
ductive revenue to the kingdom.

On a matter of such extensive discussion, it cannot be e:
pected that the result of my hasty observations can affo
much satisfaction. Heads of inquiry it seems to be rig
to suggest. I shall only add a few cursory remarks, whi
may hereafter be much improved and extended by tho
more fully acquainted with subjects so highly interesting
that part of the kingdom: the produce of which species
industry, in ancient times, formed the chief staple articles
the commerce of Great Britain, and is at this moment
no small national importance.

The mines of Cornwall consist chiefly of tin, copper, a
some lead. The strata in which these metals are four
extend from the Land's End, in Cornwall, in a direction fro

W.

west to east, a very considerable distance into Devon, to the furthest part of the Dartmore Hills. These strata consist chiefly of the various species of the schistus, here called killas, and of the granite or growân. This extensive range forms the high ground in the middle of Cornwall, from which the winds, rain, and storms, have washed much of the vegetable earth to enrich the vallies, and in which they have been aided by the operations of the miners.

TIN MINES.

FORMERLY immense quantities of this metal were found in the county of Devon, and in the eastern part of Cornwall; and innumerable ancient workings are to be seen on Dartmore, and the adjoining country; and in the east of Cornwall. In Devon, of late years, several ancient works have been resumed, and some new discoveries made, of which we shall give some account in the survey of that county. In the eastern part of Cornwall some old works have been lately resumed on Hengston Down, and Linkinhorn parishes, which formerly produced considerable quantities of tin, and promise well to the present adventurers; but at present the chief seat of mining lies to the westward of St. Austle. From hence to the Land's End, the principal mines are to be found in various strata, extending along the northern coast, keeping a breadth of about seven miles.

Polgooth, the most considerable of the tin mines in the county, lies about one mile and a half west of St. Austle, and has produced, on an average, the last eight or nine years, about two thousand five hundred blocks per annum. This mine remains still as rich as ever. Some others there are working in this neighbourhood, but not of much consequence.

In the parish of St. Agnes, and its adjoining parish Perranzaboloe, there are a great number of mines, the joint produce of which is very great.

Kenwin,

Kenwin, Kea, and Gwenap, afford considerable quant
of tin. In Gwenap is the mine called Poldice, very anc
and deep. It has yielded sometimes one thousand bl
yearly. It may now with more propriety be denomin
a copper mine. In this, and many other tin mines, w
they get to a great depth, the tin wears out, and leaves a
or vein of copper.

Huel Virgin is another instance of this kind; but
produces, at her greatest depth of one hundred and sixty
thoms, some tin mixed with copper, I have enumerat
amongst the former. In Redruth, from Huel Pever, a
tion of Northdowns and some other parts of the parish,
is produced. In this parish the ancient mine of Trel
Wood, though long neglected, will probably be wo
again. In Wendron, north-east of Helstone, the tin m
are numerous; and though not individually large, the an
and present quantities are high. Between Helstone and
razion, are the tin parishes of Sithney, Breague, Ge
&c. &c.

Immediately beyond Penzance, is a tin mine worked u
the sea. The shafts through which the miners go dow
work, is situated nearly one hundred yards below highw
mark. During the greatest part of the flood and ebb t
if the works were to give way, they would be expos
inevitable destruction. Further westward from Penza
there are only small scattered mines, until you come t
Just, in which stands Cape Cornwall, one of the wes
promontories. In this there are several mines, the an
and present produce of which is very considerable. N
and north-east of Penzance, to St. Ive's Bay, are m
mines, and generally much tin, but not at present so pro
tive as of late years: from hence, little, until you r
St. Agnes again.

I have thus given a general view of the tin min
the county. I shall also just enumerate the stream w

by which is meant the operation of washing the soil in the vallies, which is found to contain tin in the form of small particles or grains, supposed to be the detritus or abraisions from the greater lodes, either at the first formation of the earth, or subsequent revolutions.

These are principally in the parishes of Lanlivery, Luxulvan, St. Blazy, St. Austle, St. Mewan, St. Stephens, St. Columb, St. Enoden, and Ladbrook, east and north-east of Truro, from five to twenty miles. The principal stream mine in the county is at Carnon, about half way between Truro and Penryn. West of this there are few stream mines.

All tin ores are brought into metal *in the county* in blocks of from two hundred and three quarters, to three hundred and three quarters each, which are carried to the different coinages held at four stated periods in the year, and not saleable until there passed and marked with the arms of the Dutchy by the officers appointed for that purpose under His Royal Highness the PRINCE OF WALES, to whom there is a duty paid of four shillings per hundred weight, on all tin so coined.

PRODUCE OF THE TIN MINES.

THE annual produce of tin for seven years, from 1786 to 1792 both inclusive, has been about 22,000 blocks, amounting nearly to 10l. 10s. per block, exclusive of duties, in the whole affording a produce of 330,000l.

From the stream ore is produced generally what is called grain tin, amounting to 5 or 600 blocks per quarter, and sometimes more. The superior price of this tin above the common tin at different times, has been from four to twelve per hundred weight.

Native gold has been found in some stream works, and also, but more minutely, blended in some mines of tin.

COPPER MINES.

OF these, I shall enumerate the principal and leading mines. In Gwenap, from two to three miles south o Redruth, and from seven, to eight or nine miles south-wes from Truro, are the Consolidated Mines, United Mines Poldice, Huel Unity, Huel Jewell, Tresavan, with some of lesser note.

In Redruth, and its vicinity North Downs, a consolidation of various old mines, in which the adventurers have sunk t this time much beyond 80,000l. with small prospect of it being returned. In this neighbourhood are some smalle mines.

In the parish of Illogan there is Cook's Kitchen, in th land of Sir Francis Basset, the most profitable mine in th county. During the last eight years, it has produced, aft paying the costs, a clear profit of 80,000l. and is likely to l lasting, in which wish every one who has the pleasure knowing the land-owner, must undoubtedly join. Near th are the mines of Tincroft, Cherry Garden, and some other In Camborne, a little to the west of these, Straypink, Hu Gons, Camborne Vean, &c. In Gwinear, still west, a Hueland, Prince George, Huel Carpenter, &c. South fro there, in Crowan, Huel Treasury, Crowan, and Oatfiel &c. From these a few miles westward are others, as Hu Leeds, Rettallack, Stalamonin, &c.

To these if we add Huel Musick, Huel Rock, &c. in S Agnes, inconsiderable, and Gunmies Lake mine near Heng ton Down, in the eastern part of the county, yielding abo 20 tons of ore per month, I believe the list will compreh all that are worth mentioning of the productive copp mines at present worked in the county.

PRODUCE OF THE COPPER MINES.

THE produce of the whole of the copper mines amounts to about 40,000 tons of ore, yielding on an average about eleven three-fourths in the hundred, and consequently producing about 4,700 tons of copper. The greatest part of the copper ores are sent out of the county to be smelted, and the price is very variable; but taking the ore at 8l. per ton, the produce of the copper mines will amount annually to about 320,000l.

There are several old mines now unwrought, and which seem to carry a probability of being at some future period renewed. But it is necessary to observe, that many of the present are become so deep and expensive, that they cannot be expected to continue many years; and that it is likely the setting on of those supposed worth being renewed, may not take place until the present deepest and most expensive are given up.

LEAD MINES.

THERE are also some lead mines in different parts of the county, but they are not much worked at present, nor is their produce great, although the ores in general, I am informed, produce a pretty considerable proportion of silver. The principal are Huel Pool, and Huel Rose, near Helstone. A few small ones on the Bristol Channel, in Perran Cubert, &c. and on the same coast, north-east of Padstow, in Saint Minver, Saint Cue, and Endilion, in which last parish was also the most considerable mine of antimony which this county has produced.

IRON MINES.

OF iron ore there is abundance in many parts of the county but there are no mines of this ore which have been much worked. Many tons have indeed been lately sent to Wales which the proprietors say is so rich, that they have not been able to find out a proper flux for it. Probably the contents of the ore they have received, have not been sufficiently investigated.

GENERAL OBSERVATIONS ON THE BUSINESS OF MINING.

I FOUND it difficult to arrive at any very accurate estimate of the number of people employed in the mines of Cornwall. Some stating the number of men as high as 22,000, others not more than 8 or 9,000. Including the streamers, who are a distinct body from the miners, the number of men, women, and children, employed in raising the ore, washing, stamping, and carrying it, amount to about 16,000: of these there are from 12 to 14,000 men capable of bearing arms, who are as brave and hardy a race of men and as much attached to the happy constitution under which they live, and the illustrious family on the British throne, as any description of individuals in the kingdom. *

I hav

* From the miners having occasionally given interruptions to the peace of the county, people who are strangers to their dispositions, might be apt to conclude that they were not so loyal, or peaceable set of people. That is far, however, from being the case, their insurrections are almost uniformly on account of either the actual dearness of grain, or from the apprehensions of approaching scarcity. But although they have frequently, from the real pressure, but more often ill grounded apprehension of approaching want behaved with unpardonable irregularity and violence, yet they have been found on different occasions, ready to follow the gentlemen of the county to Plymouth

I have stated the number of men capable of bearing arms in the mining district at 14,000. These men have better wages than any other labourers in England. They marry young, and have large families. In a narrow slip of barren country, where the purposes of agriculture would not employ above a few thousand people, the mines alone support a population of from between 50 and 60,000, exclusive of the artizans, tradesmen, and merchants in the towns of Saint Austle, Truro, Penryn, Falmouth, Redruth, Penzance, &c.

To this must be added the number of seamen carrying and recarrying the produce of the mines, the coals, hemp, powder, timber, iron, tallow for making candles, grain, flower, and the various other supplies to the mines, which altogether constitute the mining business a trade of great national importance.

The farmers also in the neighbourhood, and the more fertile districts to the eastward, have thereby a ready market for their produce, in affording great encouragement to agriculture, the want of which would be severely felt, if in so remote a country this demand was to be taken away by any sudden reverse in the prosperity of mining.

It has been remarked to me, by a gentleman of much discernment, and thoroughly acquainted with the county, as well as with most parts of England, "that there are more men who possess fortunes sprung from the mines, of five, and from that to twenty thousand pounds, than there are in any other county in England, excepting the metropolis and its vicinity, and there are some instances of individuals acquiring from fifty to two hundred thousand pounds from the mines and by a fortunate course of trade."

With

mouth, or such other places as their services were required for the defence of the country; and, I am persuaded, that if any such occasion should again present itself, they would be found equally ready to turn out, according to their motto, "one and all," in support of their Sovereign and their Country.

With all these advantages derived from the mines, by adding to the force and wealth of the nation, it is a problem with regard to the solution of which I found various opinions whether, upon the whole, the produce of the mines pay for the capital stock, and labour expended upon them.

In general, the mining business is considered as a lottery, in which there are more blanks than prizes; but these prize sometimes are so very high, that they excite people to adventure, without making any very accurate calculation of the probability of loss.

The highest prize I have heard of, was that of Huel Virgin in Gwenap.

In the first fortnight's working, it threw up copper which sold for 5,700 pounds; in the next three weeks and two days, as much copper as sold for 9,600 pounds. To raise the first mentioned quantity, the adventurers expended no more than one hundred pounds; to raise the second, a trifle more, in proportion to the quantity. This mine has been continued to be worked, with great profits to the land-owner and adventurers, for more than thirty years.*

* A very full account of the mines will be soon published in a new edition of the "Mineralogia Cornubiensis," by Mr. Bunnellack, a work which I would recommend to the patronage of the public. The Editor has had near fifty years practice in all the branches of mining, and will no doubt give much interesting information. Subscriptions are received for it, at Mr. Phillips' bookseller, George Yard, Lombard-Street; and by Mr. Robson, of Bond Street.

SECT. III.

SOIL.

I. BLACK GROWAN SOIL.

SO great is the variety of soil in the county of Cornwall, that to describe it with correctness, would require an history of every parish. I shall just point out the general distinctive characters. Throughout the higher lands, almost generally the upper stratum of soil consists of a light black earth, intermixed with small gravel, the detritus of the granite or growan. Hence they call this soil by the name of *growan*. This soil, on the tops and sides of the mountains, is very shallow, and even on many of the more level and flat extensive wastes, of no great depth. Its natural produce is a thin short heath, and the dwarf or Cornish furze. Throughout the whole of the mining district, and in many parts of the eastern districts, it is the practice to pare the surface of these grounds, as a miserable substitute for fuel. Underneath this upper stratum there is generally to be found about seven or eight, sometimes not more than four or five inches of a stratum of a cubical quartz, of various sizes, and under this a whitish or yellowish loamy clay. By digging up the quartz, picking them off the ground, and afterwards intermixing the under strata of clayey loam with the growan earth, on the surface, a soil is produced of a very good quality, and fit for any sort of grain. The miners are encouraged by the gentlemen of the county to pursue this sort of cultivation, by allowing them as much as they chuse to cultivate of the wastes for a trifling quit-rent, and some of the gentlemen of the county, particularly Sir Francis Basset and Sir John St. Aubyn, have it in consideration to encourage this still further,

ther, by giving premiums to those who show their industry
this sort of cultivation.

To excite the miners to cultivate the soil, is highly wo
attention, as they have much time on their hands, betwe
the intervals of their going under ground, which is often
more than six, and at most eight hours out of the twen
four. At present their leisure time is very much taken up
the summer in procuring fuel. The coasting duties on co
have been taken off for the use of the mines. If this ind
gence were extended to the *miners*, it would have a good
fect. A commutation for the duty might be easily made
an additional local duty upon the licences of all pu
houses, for retailing spirituous liquors, which might be a
quate to the revenue derived from that duty, and easy in c
lection; which measure I beg leave to suggest to the gen
men of the county of Cornwall.

In all these waste lands there are a great many shal
indented vallies, where for ages a collection of soil has b
accumulating, inundated at present with water, or cons
ing of oozy bogs, carrying on their surface sedge or rus

By draining these moors, as they are called in Cornw
it will be generally found, as I have seen in several partic
instances, that the upper surface consists of a black e
formed into the more solid substance of a species of pea
collection of vegetable earth which is burnt for fuel, by
ting it in the form of a brick and drying it, and the soil
derneath, the rich collections or sediment from the mo
tains, and capable of being converted into fine meadows.

These two species of improvements, I apprehend, will
day be objects of general attention to the people of C
wall.

Mr. Praed of Trevetho has, I believe, the undisp
merit of introducing these improvements on a large sca
By a skilful and judicious intermixture of soils, from v
he has dug and picked out the cubical quartz, he ha

proved a large tract of country to such a degree, as to be able to let that part which he has so improved for thirty and forty shillings per acre; while that around it, of the same nature and capability, is certainly not worth six-pence per acre. This gentleman has not only produced also fine meadows from the moory ground above described, but has converted some old stream works into as fine hay and pasture grounds as any in England.

These stream works were merely heaps of stones, from which the soil had been washed by the tinners, and had lain for ages. They had collected some scanty portions of new soil, which served only to nourish brambles and furze. By levelling these heaps, and letting the water, saturated with earthy particles from his stamping-mills, run over them, they acquired by degrees a new accumulation of soil, which produces great crops of hay, and is afterwards pastured by his cattle and sheep.

Trevethoe on these accounts, as well as for the judgment shown in planting, which we shall more particularly describe hereafter, deserves to be visited by the amateurs of rural improvements, and to be held up as an example to the other parts of the county, in which there are a great variety of situations equally capable of the same kind of improvement.

2. SHELFY OR SLATY SOIL.

A great part of the soil of Cornwall consists of a kind of slaty earth, the detritus of the softer species of the schistos. This kind of soil is found in many parts of the west and south-west, near the sea shore, stratified in regular strata: it is also found more inland, in patches. It produces excellent crops of wheat, and particularly of barley. It also makes an excellent compost with the more viscuous earths, sand, &c. as I have seen successfully practised at Clowance, the seat of Sir John Saint Aubyn.

In the eastern part of the county, there are two very fertile districts which abound with this species of soil. One of these districts is on the north, and the other on the south side of the range of mountainous grounds we have described.

The northern district is on the banks of the Alan and Camel towards Padstow, and from thence west on the one hand as far as the parish of Cuthbert, or on the other north-east to Lanteglos.

In the south, on the banks of Fowey, around Menabily, the seat of Philip Rashleigh, Esq. from that river, extending eastward, skirting Bodmin Downs to Liskeard, Saint German's, and to the banks of the Tamar, below Hengston, this soil prevails, stratified in many places with reddish and hazle loams.

These two districts are very fertile. The northern produces immense crops of barley, and may be justly called the Granary of Cornwall. It is from thence, the miners of the west are chiefly supplied with that grain. On the south plentiful crops of wheat as well as barley are produced. They grow wheat in the northern district, but in the south they have the advantage of procuring lime from Plymouth, which would be very expensive in the north: this they use as a preparation for wheat.

Besides these two districts, is a very rich tract of land on the banks of the river Fal, around Tregothnan, the beautiful seat of Lord Falmouth, extending to Grampound and Trewithen, the seat of Sir Christopher Hawkins, &c. round by Tregony to Roseland. Another district of excellent fertility is to be found on the river Hel, around Trelowaren the seat of Sir Cary Vivyan, Anthony, St. Kevran, &c. towards the Lizard Point.

In the hundred of Stratton, on the north-east of the county, around the town of Stratton, and towards Morwinstow, there is a district of good land, although the greater part of this hundred consists of waste and boggy land. To

ward

wards Penzance also, on the south-west, there is some land which produces very large crops of potatoes and grain.

In general, the more internal parts are only cultivated in patches, and these surrounded by uncultivated wastes and commons. The most remarkable of which are those extending from near Launceston, almost to Bodmin, and to the south and south-east of this borough. In the parish of Saint Agnes, and the neighbouring mining parishes in the west, there are extensive tracts of waste lands. On the south, towards the Lizard, there is also an extensive tract of waste, called GONHILLY DOWNS.

We shall endeavour hereafter to state, with as much accuracy as we are able, the extent of waste and cultivated land in this county; but the proportion of the former is obviously very great indeed, and that not of waste lands incapable of cultivation, but of lands, in point of soil, climate, and opportunity of procuring manure, extremely favourable for cultivation. But such is the propensity to adventure in digging into the bowels of the earth, in the hope of acquiring sudden riches, that agriculture is considered only as a secondary pursuit In consequence of which, the western hundreds of Penwith, Kerrier, Poudre, and the western parts of Pydre, do not afford a supply of corn sufficient for their inhabitants. In the eastern districts which we have mentioned above, around Padstow on the north, and St. German's on the south, and adjacent to the Alan and the Fowey, there is a greater quantity of grain raised than is sufficient for the inhabitants, and by many supposed equal to the consumption of those in the less fertile districts. The farmers however, in these cultivated districts, find it more convenient to sell their wheat and barley to the merchants who export grain, than to carry them to the markets in the western part of the county.

From this circumstance, it happens sometimes, that the markets in the western parts amongst the mining districts are ill supplied with grain, particularly barley; and on such occasions

casions it has often happened, that the tinners have ris
in great bodies, and proceeded to the places of exportatio
with a view of deterring the merchants from exporti
grain. These shameful and illegal infractions of t
peace of the county, have for some time become almost a
nual. By the influence of the gentlemen of the county, w
have always come forward to their aid, in case of any r
scarcity, and by the exertions of others more immediat
connected with the miners, I was glad to find, that they w
sensible of the impropriety of this conduct, which, like
other illegal violence, not only exposes the aggressors to
just severity of the law, but defeats the very purpose th
intend thereby to effect, by making the farmer accelerate
exportation, and rendering him afraid to bring his grain
the country markets from the fear of being plundered,
made to sell it at an under price.

On the whole, Cornwall, populous as it is in the min
districts and along the sea coasts, yet if agriculture was m
attended to, there can be no doubt that it would supply s
sistence for a much greater population than it actually p
sesses. The sea affords ample supplies of a variety of f
potatoes grow no where in greater plenty, or of better q
lity; by further exertions of industry in cultivating their la
it will be obvious to any one who views that county, t
they may produce grain of all kinds in great abundance;
it is to be hoped, that we shall soon hear no more of c
plaints of scarcity, or approaching famine, in a country wh
nature has bestowed so much, and man done so little.

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SECT. IV.

CLIMATE.

THE sea, being of itself always of the same temperature, has a tendency to assimilate the same quality to air passing over it. Hence arises the temperature of island situations. Of the advantages and disadvantages of such circumstances, Cornwall, so nearly approaching to an island, must in a great measure partake. Hence in Cornwall, the air is milder in winter than in the more internal parts of England, and cooler in the summer months. From its being open to the vast Atlantic ocean, without the intervention of any land almost to the coast of America, it receives the whole force of the south-west winds, which are remarked to blow, in general, throughout Great Britain four-fifths of the year.

———Madidis Notus evolat alis
Terribilem picea tectus caligine vultum
Barba gravis nimbis, canis fluit unda capillis
Fronte sedent nebulæ rorant pennæque sinusque.

This character which the south wind has had in all ages, it preserves in full force in Cornwall. The air is thereby more full of moisture, and frequently subject to fogs, but they are not unhealthy. Ray-grass is earlier than in more internal parts of the kingdom: the winters very open, last winter for the only time these five years were the gentlemen able to procure ice to fill their ice-houses. From the prevalency of the south-west winds also, it is very difficult to raise plantations of trees in exposed situations; and it is only in sheltered vales where any remains of the ancient natural woods are to be found, although there is no doubt that this county, as well as the greatest part of all continents and islands, has originally been covered with wood. Myrtles grow every where in the open air, without the aid of greenhouses, both in this county and Devonshire, particularly on the

the southern coasts. Many other tender green-house plants are to be seen in the open air, in the gardens of the curious. The President of the Board has very properly recommended, from these circumstances, the trial of the Guinea grass.—Others may also be found of great importance, which will not bear the winter cold, and sudden changes of temperature in other counties.

SECT. V.

THE MANNER IN WHICH THE LAND IS POSSESSED.

FOR the better understanding this part of my inquiry, it is necessary to observe, that in ancient times the whole of the lands both in Devon and Cornwall, consisting of the mountainous waste and moory lands above described, in which tin was found, belonged to the King; the revenues arising from which, and from the coinage of tin, formed a very considerable part of the revenues of the Crown. This territory was anciently reputed a Dutchy, but a little before the Norman Conquest was an earldom. By Edward the Third it was a-new constituted a dutchy; the first that was erected in England after the Conquest, and conferred on Edward the Black Prince, with the special limitation to the first begotten sons, and heirs apparent, of him and his heirs, Kings of England, for ever.

A very great part of these wastes and moors still are parcel of the said dutchy, to which also other manors, lands, and hereditaments have been added by subsequent acts of parliament, in lieu of other lands in other counties, taken from the same by act of parliament, with the obvious intention of preserving the value of the dutchy entire.

The dutchy lands are still by far the most extensive of those belonging to any proprietor in the county. The lands of the other proprietors are very much intermixed with the dutchy lands, and with each other. Property is very much divided; there are very few who possess, of landed rental within the county, more than 3000l. per annum, exclusive of under ground profits.

From the limited power which His Royal Highness the PRINCE of WALES possesses of granting these dutchy lands for the purposes of improvement by cultivation, and from undefined claims to common, a great and valuable part of this county is very much locked up from public improvement: to propose some remedy for which is an important object for the consideration of the Board, and which we shall treat of in a separate section.

With regard to the manner in which the lands are occupied, the farms are in general very small. In the eastern and more fertile parts, rents, in general, do not exceed thirty or forty pounds per annum; the greater part not above ten or fifteen pounds per annum; some few are as high as 100l. and from that to 200l. per annum. All the farms are generally on leases of lives. In the western and mining districts they are very small indeed, chiefly cottage holdings.

HUSBANDRY.

"THE art of husbandry was little practised in Cornwall two centuries ago; their grounds lay all in common, or only divided by stiche meale, and their bread corn very little; their labour horses were only shod before, and the people devoting themselves entirely to tin, their neighbours in Devonshire and Somersetshire hired their pastures at a rent, and stored them with cattle they brought with them from their own homes,

homes, and made their profit of the Cornish, by cattle fed their own doors: the same persons also supplied them at the markets with many hundred quarters of corn, and horse loa of bread."*

"This was a very disadvantageous state of the commer of this county, for the products of the tin will always fluctuating and precarious; but the necessity of flesh a corn is perpetual, and the returns from husbandry proper managed, annual, regular, and constant. People therefo increasing, and the mines sometimes failing, the Corni felt the necessity of applying themselves to husbandr there being no trades (says the judicious Mr. Carew), whi set so many hands to work at all times of the year, as th one of tillage.

"Their improvements answered their expectations, a in the latter end of the reign of Queen Elizabeth, the Corn found themselves in a capacity not only to support the selves, but to export a great deal of corn to Spain and otl foreign parts. Cultivation has been advancing ever sinc and better fenced and more profitable inclosures for plough are no where to be seen, than on the banks of c greatest rivers, Tamar, Alan, Faland, Fawy, and the s coasts of our harbours can shew."†

This interesting account of the progress of cultivation this county, ought to excite the people to farther impro ments; for, notwithstanding the worthy historian's p tiality to the improvement of his native county, it m be confessed, that either agriculture has decayed, or t the population of the county has increased much beyc the advancement in the improvement of their lands, Cornwall cannot boast of such an estimate of produce was made in the days of Cambden.‡

T

* Car. page 19, &c. † Borlase's Nat. Hist. page 84. ‡ Eng. pag

The management of the land is uniform; here and there an exception will be found. The whole is convertible, sometimes into arable, and sometimes pasture. Arable is sown with wheat, barley, or oats, as long as it will bear any; and then grass for eight or ten years, until the land is recovered, and capable again of bearing corn. There are many instances of what is called furze crofts, where they are so run out by this management, that they do not recover themselves more than once in a generation.

The process they pursue is, in general, by paring and burning the surface of the ground. ✕ The land is then dressed with the ashes, and a compost of sea sand, earth, and the scrapings of lanes, in which they throw straw to collect the soil and moisture: to this they add the dung which they save in the farm yard, or which they purchase from the adjacent towns.

Their chief dependence is on the sea sand, which is fetched on horses backs, or on mules, as is almost every where the mode of carriage, both in Devon and Cornwall, of which they use from eighty to two hundred horse loads per acre, according to their distance from the sea coast.

The common use of this manure is preparatory to a wheat crop; the seed being chopped in with a mattock. This is succeeded by one, and frequently by two crops of barley or oats; with the last of which grass seeds are sown, which are, rye-grass or *iver*, trefoil, and Dutch clover.

The best farmers take only one crop of barley after wheat, and lay down with grass seeds, which they dress with dung and earth, and after four years break up again; but in general, with all those lands that are at a distance from their farm-yards, they pursue the same negligent mode above described. They sow them with oats, or barley, as often as they think it will pay the expence of the tillage; and very often, when they have little more than the seed returned, which so impoverishes the land that it cannot be

broke up again to any advantage, but remains in furze a
brambles for twenty-five or thirty years, reducing it to a
gritty substance, little more than a caput mortuum.

While truth demands that I must state this process as
general routine of managing the land in the county
Cornwall, it is also but justice to state, that there are ma
who pursue a liberal and enlightened course of husband
and instead of running out the land in the mode I h
described, perceive the advantages arising from supply
it with proper manure, and introducing green crops betw
the crops of grain.

Turnips are by the best farmers sown after wheat,
which they commonly manure with dung and sea sa
afterwards lay down with barley and grass seeds. Par
and burning is very generally, amongst those who are
puted the best farmers, stigmatised as a barbarous practi
and they allege, that they find it much better to use
plough alone.

In Devonshire, however, this practice has been contin
with advantage for these three hundred years; and I
inclined to think, that it is only the injudicious mod
paring and burning, and the running out the ground af
wards by too frequent cropping, that has given rise t
reprobation of a practice, which, under proper managem
is well suited to the nature of a soil uncommonly over-
with weeds and wild plants, which cannot easily be destro
by any other mode.

PLOUGHS AND IMPLEMENTS OF HUSBANDRY.

Horses and oxen are generally both used for the plo
throughout this county as well as Devon. The cou
very hilly, not admitting the use of carts, the horses
wanted for some carriage or another, and are almost al-

under the pack-saddle. The plough team is sometimes four oxen, and sometimes only two, with always one or two horses as leaders before the oxen, with a man or boy to drive them. The plough commonly used is extremely aukward and inconvenient. The Suffolk plough, with two horses, without a driver, is used at Trelawn and some other places, and performs double the work, and at much less expence than the common Cornish plough. But the farmers will not be persuaded to adopt it. The double furrowed plough has also lately been introduced, and answers extremely well on level fields. The ploughing matches, instituted by the Society of Agriculture, for the formation of which the county is highly indebted to Sir William Molesworth, are well calculated to raise an emulation among the farmers in this essential article of agricultural management, in which they are in general in this county very deficient. It would be well if the Society, or the gentlemen of the country, were to get a number of the Suffolk ploughs, or the Kentish turnwrist ploughs, and induce the farmers, by little premiums, to use them: they would soon find the benefit of them by saving both time and labour.

In the western part of Cornwall they use an immensely large plough, for turning up the quartzy stones which lie under the upper surface of the ground. Mr. Pread, of Trevetho, has a team of six or eight oxen for this purpose; Sir John Saint Aubyn, a team of fourteen oxen and seven horses, with which he ploughs to the depth of twenty and sometimes twenty-two inches.

This had certainly much better be done by two separate instruments; one for cutting the root of the furze, and loosening the quartzy stones, and afterwards a plough to turn up the soil and stones. This operation, however, would be still more effectually done by hacking and trenching; and would be in this way, in a country where, like Cornwall, there are abundance of hands accustomed to this

sort of labour, performed cheaper on the whole, as it w
thereby be done most effectually.

This very mode is every where pursued by the mine
cultivating their little crofts. Mr. Grosette, an intell
farmer in the neighbourhood of Truro, has introduce
Yorkshire schim, with an improvement of his own, w
throws up the weeds and levels the ground with great e
dition; and several gentlemen are adopting it. The w
of the economy at this farm is admirable, simple, and i
ligent, and deserves to be attended to by every one i
county who is ambitious of improving the system of far
commonly practised. Carts are not used either in D
or Cornwall; every thing is carried on horse's back
on mules. The Irish car, I should apprehend, would
great improvement to the husbandry of these counties.
the north of Ireland, where ground is as hilly as in
parts of Cornwall and Devon, a single horse will draw
a ton with great ease, which is more than three of the
nish horses carry on their backs. These Irish horses
however, a much better and larger breed, and excelle
draft. In Cornwall they keep vast numbers of little h
and mules, which, when their work is over, they turn
the common, or into fields already eaten almost bare by
cattle; so that they are at little or no expence in kee
They cannot be induced to try other modes of carriage.
must be remarked also, that the ascents from the sea sh
from which they bring sand and ore weed, are freque
extremely steep.

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ctober, & on
bove 100,
the high
frequent
the damage
Dr M Fraser.

MANURE, LIME, ORE WEED, SEA SAND, PILCHARD S
AND DUNG.

In the eastern part of Cornwall, near the sea, and
rivers, they bring lime-stone from Plymouth, which

burn with culm from Wales, and use each as a preparation for wheat. Afterwards the best farmers use a compost of sea sand, pilchard salt, dung, and the rotten slaty earth, as a preparation for turnips; afterwards lay down with barley, for grass seeds. They use from eighty to one hundred bushels of lime, and from one hundred and fifty to two hundred horse seams of compost.

The manure produced from the bruised and decayed pilchards, and the Bay salt already used in curing the pilchards, and declared by the salt-officers unfit for farther use, is purchased by the farmers, and, consisting of oil, salt, and putrified fish, is a most excellent dressing for land. It is purchased from eight-pence to one shilling the bushel, consisting of two Winchesters, or sixteen gallons. ✕

This is the best of all manures, and the cheapest, as it goes farther than any other; is lighter in carriage, and lasts very long. It is mixed like lime, with earth sand, in various proportions, as it is easy or difficult to be procured, from forty to sixty Winchesters, to one hundred and fifty or two hundred seams of sand and earth; it is left to ferment and incorporate with the sand and earth, and the whole frequently turned over and mixed, before it is laid on the land.

FERTILITY AND PRODUCE.

After a dressing of this kind for barley, on some lands near the Lizard, I have been assured that ninety bushels of barley, Winchester measure, have been produced on an acre, statute measure; and that it is not uncommon to have from seventy to eighty bushels; seventy-five bushels they consider as a middling crop. Such a surprising fertility may, perhaps, hardly be credited, but it is supported by undoubted authority. Although there are not many districts equal to this, yet there are some other extensive tracts extremely fertile. In the district

trict we have formerly described as extending from Cubert to Padstow, and from thence to Lanteglos by Camelford, the land is so wonderfully fertile, that with the common dressing of sea sand, earth, and dung, they first sow wheat, and then barley, without any fallow or intermediate crop, with which crop of barley they sow grass seeds as before mentioned, which they cut for hay next year; and after leaving it one year at rest, repeat this practice perpetually. Yet even with this management, they get of wheat, from 24 to 30 and 3 Winchester bushels per acre, statute measure; and from 30 to 45 bushels of barley.

POTATOES.

TOWARDS the western part of Cornwall, about Penzance &c. they produce two crops of potatoes in a year: they plant the kidney potatoe about Christmas or a few weeks before it which they draw in May, and plant in the same ground the apple potatoe. Captain James, of Morazion, assured me that two years ago, he had by this management in the first crop from one acre, 100 Cornish bushels of twenty-four gallons each, and in the second crop 200 bushels; so that from one acre Cornish, which is one acre and one eighth statute measure, he produced 900 Winchester bushels of potatoes in one year. The manure they use, is sea sand or weed and dung. This mode of forcing crops of potatoes is certainly not to be generally recommended. By the common mode of planting potatoes in the end of April and beginning of May, after paring and burning, 450, and from that to 600 Winchesters, are no uncommon produce. This aptitude of the soil and climate in this part of the kingdom to the plant is easily accounted for. The summers are here always moist, and the ground warm and dry. The western isles of Scotland are fully as moist, if not more so than the county of Cornwall, or the western parts of Ireland. I have seen in the

isles of Canna and Tiree most excellent crops of potatoes with the same kind of dressing as is practised in Cornwall. These islands are, however, comparatively much colder than Cornwall, and yet their produce in the article of potatoes is greatly superior to the inland part of Scotland in the same latitude. The produce of potatoes in the west of Ireland is also known to be extremely abundant.

In these particular isles of the Hebrides which I have mentioned, it must be remarked, that the soil itself is dry and porous, containing a great mixture of sea or shell sand, and is very much of the same nature as the soil about Penzance and other parts of the west of Cornwall, all which goes to prove the propriety of cultivating potatoes in situations where the soil is dry and the climate moist.

If Ceres was deified amongst the ancients for the introduction of corn, surely Sir Walter Raleigh deserves the highest veneration in modern times, as the greatest benefactor of mankind by the introduction of potatoes, which has certainly rendered the subsistence of the poor in these kingdoms more easy, and of course added more to population than the inventions of all the statesmen that ever existed upon earth. Dr. Smith, in his excellent book of the Wealth of Nations, places the advantages arising to these kingdoms from the introduction of this valuable plant in a very strong point of view, and prefers it, as an agreeable food for mankind, to any other species of grain, excepting wheat, to which perhaps it is almost equal in point of nourishment. And he very justly observes, that if we look to facts, we find they will bear us out in the opinion of the excellence of this plant as a food for mankind; for he adds, that the strongest men, and the most beautiful women in the three kingdoms, are to be found in Ireland, where the principal food is certainly the potatoe.

With all the advantages which this plant possesses as a food, and its easy culture and steady and prolific produce, it would undoubtedly be cultivated in preference to all sorts of

grain,

grain, were it not for this circumstance, that it cannot be kept from perishing like grain, and must be consumed within the year. It is therefore to be wished, that Dr. Cuthbert Gordon, who, in the year 1786, produced, at a highly respectable meeting of the Subscribers to the British Society for extending the Fisheries and improving the Sea Coasts, a specimen of flour or meal, that keeps sound for any length of time, (being impervious to the air) made of potatoes, which, together with the bread made thereof, is grateful to the taste, a wholesome and nutritious food, and in all respects much to the satisfaction of every one present, would be prevailed upon to communicate the secret to the public. It then indeed was understood, that he generously intended to communicate this much longed for *arcanum* to the Society, for the use of their intended settlements in the Highlands. May it not be asked, for what reason should it be so long delayed? A promise, made in the presence of so respectable a meeting of noblemen and gentlemen, it becomes the credit of Dr. Gordon's genius, no less than the generosity which prompted the promise, that performance should follow at no mighty distance.—Perhaps the Doctor may remind us of the condition of the promise, a public remuneration for his other beneficial discoveries, which, we are sorry to understand, has not yet taken place.

Potatoes being principally used as food for man, it returns little to the earth, and becomes in some degree like grain, an exhauster of the land. It is also bulky and heavy in carriage, for these reasons the people in Cornwall grow only small quantities, in order to supply themselves and the nearest markets; and the price of potatoes in Cornwall, last winter, was more than double the price in Cheshire, where certainly manure is not more easily to be had, and the demand of the markets is much greater. This very greatness of the demand is perhaps the actual cause of the cheapness of potatoes in Cheshire. It is also owing to another cause, to which it is highly

ghly important that the people of Cornwall should attend—
s the great advantage of potatoes as a food for cattle. By
ng them for this purpose, either for fattening bullocks,
ep, or hogs, or for feeding working horses or cattle, for all of
ich purposes they are excellent, the farmer can never fear
ving any waste upon his hands, and can therefore afford to
pply the neighbouring markets at a much less price than
ere they are obliged to calculate upon the chance of waste
the article laying on their hands; and consequently from
nature of it not being capable of being stored over to
ther year, a great part must be lost. The use of the po-
e generally, in some parts of this kingdom, as a food for
n, is still within the memory of many now living, and its
as a food for cattle is still very recent. The introduction
it as food for cattle is also important, as by this means a
t of the produce is returned in dung to the farm, which
vents the crop from impoverishing the land. Lately, po-
es have been tried in all ways, raw, boiled, and steamed,
used as food for cattle, horses, sheep, and pigs. Mr. Bil-
gsley has published in the Transactions of the Bath Agri-
tural Society a most ingenious and elaborate set of experi-
nts on fattening pigs with potatoes, which are highly deserv-
attention. Mr. Crook, of Tytherton in North Wiltshire,
naking experiments on a large scale for fattening oxen; and
informs me, that the result has been highly satisfactory. He
sses them with steam in a very simple and easy manner, and
h very little expence. He takes a vessel fitted to the size of
boiler; one that is generally made use of for heating water
washing, is sufficiently large, holding about eight or ten
lons of water. In the bottom of this steamer there are a
mber of holes about the size of a common auger, which
ow the steam to pass through the potatoes with which the
ler is filled, the bottom, where it rests on the mouth of the
ler, being made tight with a wet cloth to secure the steam
n escaping. The steamer, for ease in emptying and filling

does not hold more than from one to two bushels. The
tatoes are quickly dressed, and the water draining from th
supplies the exhausting of the steam. They are then o
turned into a cooler, and more put in their place. The
tatoes are afterwards mixed with chopped hay and strav
The cattle are kept in houses or sheds, and furnished
this food without any addition of corn.

The only question is, whether they can be produced c
enough to pay for this mode of management. Mr. Billing
and Mr. Crook both decidedly prefer them to turnips. T
have this advantage, that they can be taken up in time
wheat, for which they are an excellent preparation; they
will keep much longer in the spring than turnips, by b
pitted in the common way practised in Cornwall, where
frosts are so light, that they require very little troubl
storing them.

Mr. Crook is also of opinion, that they may be raised
various manures, easily procured, and not hitherto much
for that purpose. The Hon. Mr. Justice Buller is just
trying, by Mr. Crook's advice, to grow potatoes on
forest of Dartmore with peat, as a substitute for mar
intermixing therewith the gravelly substrata to be foun
that kind of land; and this, and various other spirited ex
ments of the learned Judge, I have no doubt will be atte
with success, and lead to new modes of improving that w
and the other extensive wastes of both these counties.
weed alone is an excellent manure for potatoes, as I
seen tried in the Isle of Man: and as in many parts of C
wall they have abundance of ore weed and sea sand, ta
with it the favourable circumstances of soil and cli
for the growth of this plant, it appears very important
they should endeavour to introduce potatoes as a far
crop on a large scale, and it is to be hoped that we sha
some spirited exertions for that purpose.

TURNIPS.

I HAVE already mentioned, that in some parts of the county turnips are introduced as a rotation crop. The practice, both here and in Devon, is to feed them off, or draw them upon lay ground, to be there fed upon by cattle or sheep, so as to have the ground ready to be tilled by Candlemas for barley. The practice, however, in Cornwall, of making turnips a rotation crop, is by no means general. It is in fact only practised by gentlemen farmers and the superior class of yoemanry; and by them the turnip husbandry is very ill managed indeed. The great use of turnips is as a substitute for a fallow, to clear the ground from weeds, and therefore they ought to be drilled and hoed with great care. Instead of this, they neither drill nor hoe their turnips; so that it frequently happens, that the couch grass is so luxuriant that it entirely covers the turnips, and it would not be supposed at a distance that there was a single turnip in the field. Where they are otherwise treated, kept clear of weeds, by being well hoed, they grow to an immense size, and certainly are a most excellent preparation for barley. In Cornwall, fallowing is never practised by the farmers, and therefore their grounds are uncommonly full of weeds. It seems astonishing, that it is so difficult to persuade them that their land would grow more corn in proportion to the destruction of the weeds, and that even a fallow would pay well for the time in which the land was in that state, by the great abundance of next year's crop.

Men of superior wisdom, observing the absolute sway with which prejudice seems to govern the rustic practice of an art which is capable of receiving so much aid from science, are very apt to lose their tempers, and to consider the tenacious observance of accustomed practices a proof of the want of understanding. Those who have attentively

considered the characters of that class of men, will be satisfied that their aversion to try new improvements in agriculture, does not arise from any peculiar deficiency in good sense or acuteness, but much more from these improvements not being clear, obvious, and so laid down, as to enable them to pursue them without too great a risk of capital and produce. Instead, therefore, of treating the peasantry with invective and contempt, I shall beg leave to make use of the language of the amiable Latin poet:

——————Quicquid eris
Da facile cursum; atque audacibus adnue cæptis
Ignarosque viæ mecum miserere agrestes
Ingredere, et votis jam nunc assuesce vocari.

SECT. VI.

GRASS LANDS.

WATER MEADOWS, which are found so great and valuable an improvement, are scarcely known in Cornwall to the farmers. Several of the gentlemen have lately begun to shew examples of this species of improvement. Sir William Molesworth has watered at Pencarrow about forty acres, which have answered exceedingly well. Sir Harry Trelawney has watered some fields at Trelawn, and is increasing this management upon this farm, which is one of the best improved of any in the county. Several other gentlemen are beginning this practice; but there is, upon the whole, very little land watered in this mode in the county.

The grass land they keep for hay is generally dressed with dung mixed with sea sand, or with dung alone, if they can procure it. They do not practise folding the sheep, which is found in other counties so excellent a mode of ma-

manuring the land; and this, although they are kept on the driest lands, where such a practice would answer extremely well. Their grass lands are also pastured by their working oxen, their carriage horses, milch cows, and young stock.

CATTLE.

THEIR cattle are chiefly of the North of Devon kind. Although the breed is not kept up in its greatest perfection, yet they are very much in request, and are sold off in great numbers for fattening. Their milch cows are therefore kept chiefly for the sake of rearing young stock, the dairy being very little attended to. On account of the wetness of the land, and the necessity of dung to mix with the sand for manure, all their cattle are housed in winter, and kept chiefly with straw. The buildings are on this account numerous in every farm. They are chiefly of cob walls, made with a mixture of clay and loam, and chopped straw, and called in other countries mud walls. These being of a mouldering perishable nature, are necessarily built on a foundation of stone, and require to be kept dry at top, or else they very soon go to decay. Some of the buildings are covered with slate, but by far the greatest part with straw

Sir Harry Trelawney, a good many years ago, procured some of Mr. Bakewell's breed of cattle, of the long-horned kind; they answered pretty well with him; but neither his own people, nor the farmers in the neighbourhood, could be induced to attend to them. He has changed them for the North Devon breed, but has kept one cow which he had from Mr. Bakewell, and is now about twelve years old, but is always in good condition. Mr. Bakewell shewed his candour to Sir Harry Trelawney, by telling him, it was very unnecessary to come so far for his cattle, when he had

so good a breed as the North Devon so near him. Th best of that breed are certainly a most excellent stock, eith for rearing or fattening. They have a small sort of cattle c the commons, and in many other parts, which they ca the Cornish breed, which, when fat, do not exceed five six hundred weight. They are too large boned for the size, and coarse shouldered. The best Scotch Highla breeds would answer much better. It is, however, difficu to get them of the best sorts.

HORSES, &c. FOR CARRIAGE.

We have already mentioned that carts are not made u of in this county. Every thing is carried on the pack-sa dle, for which both horses and mules are used. Mules ha lately come greatly into use, particularly for carrying a recarrying the produce and supplies of the mines; for whi great numbers are wanted, and they sell at a very high pri Sixteen, eighteen, and twenty guineas are given for a mu The common horses are small, but very hardy, and w adapted to a hilly county. They might, however, be mu improved by a little attention to a proper choice of ma and stallions.

breed are adapted as I know e. W. M.

SHEEP.

The common sheep in Cornwall are the same as the n breed of Devonshire. They have a small species of this k of sheep in Gwithian, which have very small tails, and a v well formed animal, and small boned. The horned sheep also to be found in some parts. At Boconoc, the seat Lord Camelford, they have a stock of Dorsets, consisting a thousand head of sheep; they have a range of about acres of land, all of which is in grass, but about forty or f acres, which are broken up for the purpose of keeping

which gained ward by the e Society.

few cattle that are necessary on the farm, and for some turnips to give the breeding ewes in winter. They shear about four pound of wool, and the wether sheep are sold off, at about 1l. 5s. and from that to 1l. 8s. each.

The shepherd is a Dorsetshire man, remarkably careful and honest; yet I am well assured that this stock does not produce any thing like a fair rent for the land. The shepherd imputed it to the small quantity of wool, and to their not having a high price for early lamb, which makes a great part of the profit of the Dorsetshire sheep-farmers. Does not this evince the great propriety of considering local situation as extremely important in the calculation of rural improvements?

The Leicester sheep have been introduced into Cornwall by Sir William Molesworth, who purchased them from Saltram in Devonshire. They are found to answer very well. This gentleman has this year procured a few immediately from Leicestershire. Sir John Saint Aubyn, in the west of the county, has also introduced the Leicestershire breed.—Sir Francis Basset, on an experimental farm, which he has taken up with his usual public spirit, means to try both the Leicester and South Down breeds. Tehiddy is situated in the midst of the mining country, and in respect of natural advantages of soil and exposure, presents many difficulties to advancement in cultivation. The study of chemistry, which Sir Francis had attended to for amusement, he has applied to the useful purposes of examining the various strata around him. He has already discovered several valuable species of marles, hitherto neglected, the effect of which he means to try on his experimental farm, for the conduct of which he has engaged a man from Suffolk, recommended by Mr. Arthur Young. The process, and the various experiments, are to be open to the farmers and public. I am confident it will be productive of the best effects, and it is to be

hoped, will be followed by similar experiments of other gentlemen of fortune in the county.

The remote situation of Cornwall renders such experiments extremely valuable, as it is not in the power of the common farmers otherwise to acquire a knowledge of the effect of new improvements.

SECT. VII.

DUTCHY LANDS IN CORNWALL.

WE have already stated that the Dutchy of Cornwall was conferred by Edward the Third on Edward the Black Prince, and to the first begotten sons and heirs apparent of him, and his heirs, being Kings of England, for ever. So that it seemed the intention was first, that none should be Dukes of CORNWALL but such as were eldest sons and heirs apparent of the Crown, and that when there was any fail of such person, then that the dignity should remain in suspence until such son and heir apparent again were extant. Secondly, that the said son and heir apparent, without any further solemnity or creation, should presently, upon his birth, being then heir apparent to the King, or from the time that he is heir apparent to the kingdom, be also Duke of Cornwall.

This, it may be remarked, is very different from the principality of Wales, which requires in every new succeeding prince a new creation, and gift of the principality. Having been requested by several of the gentlemen of the county to state the nature of the holding of the dutchy lands, and to enumerate the different manors, some discussions also having

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ing taken place with regard to them, which are essentially connected with the improvement of the agriculture of the county. I hope the Board will not think their time thrown away if I lay before them, at some length, an explanation of this part of the territory of the dutchy situated in Cornwall. There are other lands in other counties also annexed to the dutchy of Cornwall, with which those in Cornwall are so connected, that it may be proper just to enumerate them.

First, then, in the county of Cornwall are the following, granted by charter 11th of Edward the Third.

COUNTY OF CORNWALL.

1. The castle, manor, and park and borough of Launceston, with its appurtenances.

2. The castle and manor of Trematon, and the borough of Saltash and the park there, with the appurtenances.

3. The castle, borough, and manor of Tyntagell, which is supposed to be the place of birth and seat of King ARTHUR.

4. The castle and manor of Restormell, with the park there.

5. The manor of Clymesland, and park of Kerrybollock.

6. The manor of Tibesta, with the bailiwick of Powdershire.

7. The manor of Tewynton, with the appurtenances.

8. The manor and borough of Helston in Kerier, with the appurtenances.

9. The manor of Moresk, with the appurtenances.

10. The manor of Penkneth, with the appurtenances.

11. The manor of Peulyn, with the park there.

12. The manor of Relaton, also Rillaton, with the headlery of Eastwyvelshire.

13. The manor of Helston in Trigshire, with the app tenances, and the park of H. llesbury.

14. The manor and borough of Liskerd, and the p there.

15. The manor of Kallestock, with the fishing there, its other appurtenances.

16. The manor of Talskydo, with the appurtenan in the said county of Cornwall.

17. The borough or town of Lestwithel, together w the mills.

DEVONSHIRE.

18. The fee farm of the city of Exeter, twenty pou per annum.

19. The manor of Lydford, with the appurtenances, gether with the chase of Dartmore.

20. The manor and borough of Braduish.

21. The water and river of Dartmouth.

IN DIFFERENT OTHER SHIRES, DISPERSEDLY.

22. The castle of Wallingford, with the hamlets members thereof, and the yearly farm of the town of W lingford, with the honours of Wallingford and St. Vale in the county of Oxford, and in all other counties wh soever the said honours do lie.

23. The castle, manor, and town, of Berkhamsted, the park there, and together with the honour of B hampsted, in the counties of Hertford, Buckingham, Northampton.

24. The manor of Byfleet, with the appurtenances, in county of Surry.

25. The castle and manor of Meere, in the county of Wilts.

26. The castle and manor of Knaresborough, with its hamlets and members, together with the honour of Knaresborough and York, and else wheresoever the said honours do lie.

27. The manor of Isleworth, in the county of Middlesex.

28. The manors of Kennington and Frankshall, together with a meadow in Lambeth and Newington, in the county of Surry.

29. The manor of Rising, with all the appurtenances, in the county of Norfolk, and the fourth part of the Talbott, in Lynne, with all the appurtenances in the aforesaid county.

30. The manor of Chislemere, and four score and eighteen pounds six shillings and eight-pence per annum rent, with the appurtenances, in the city of Coventry, which were then in lease to the queen's mother, for her life.

These revenues were so annexed to the dutchy, by the words of the charter, as to be in no case whatever aliened therefrom; and as it afterwards appears, that no king thought himself justified in severing away these lands from the dutchy, without annexing to the same other lands of a much greater value in lieu thereof.

And accordingly it appears, that King Henry V. in the ninth year of his reign, having founded the monasteryof Sion, severed the manor of Isleworth from the said dutchy, and in lieu thereof conferred divers other manors in Somerset, Dorset, &c. which exceeded in annual value the lands severed, by the sum of two hundred pounds.

King Henry VIII. also, at his parliament, holden at Westminster, the thirty-first year of his reign, and prorogued on divers occasions until the twenty-fourth day of July, in the thirty-second year of his reign, did sever the castle of Wallingford, and all lordships, manors, lands, tenements, and other hereditaments thereunto belonging, from

the dutchy of Cornwall: and in lieu thereof, there was annexed to the said dukedom divers manors in the county of Cornwall, viz. The manors of Westanton, Port-Low, North Hill, Port-Pigham, Laudren, Triloweia, Tregonoe, Trelagan, Crosthole, Trevithorne, Courtney, Landulph, Leighdurant, and Tinton; and all other his lands in the said places, which came to the said king, by the attainder of treason of Henry Courtney Marquis of Exeter; also, the manors of Austell, Fentregan, Tremeynalls, Tremagevon, Fowey, Credyowe, and Portneaprior, in the county of Cornwall, which came to the king's hands by the dissolution of the priory of Trewerdreth, in that county; also, all the manors of Breadford, Caverdon, Clymesland, Pryor, Treworgy, Stratton, Eastway, Bowyton, Bradrissey, Buchlaurue, and Bonyalvey, which came into the king's hands by the surrender and suppression of the priory of Launceston.

By the above, and other accounts and records, it appears, that the said dutchy of Cornwall consisted formerly of ten several castles, which in ancient times were places of great consequence and strength; they are now all in ruins and gone to decay. There were, in ancient times, nine parks and one chase or forest, all of large extent, and replenished with deer. They have long been disaforested, and by various encroachments are rendered of little or no value to the Prince. The dutchy also contained fifty-three manors, many of which were of great yearly rent of assize. Of ancient boroughs and towns, there are within the said dutchy thirteen in number, formerly of great power and influence. There are nine several hundreds parcel of the said dutchy, besides extensive tracts of waste and moory grounds, included in or adjoining to the various manors.

At present what remains of these extensive possessions, are farmed on leases of lives, subject to small ancient quit-rents, and renewable for fines; in some instances certain and

thers arbitrary. The revenues of the dutchy of Cornwall, s appears from the accounts of the receiver of it, in the ifteenth year of King Henry VIII. amounted, of clear an- nual value, to 10,095l. 11s. 9¼d. This is a large sum for hese days; and this without the casual revenues from reprises, &c. The coinage dues, which form part of it, amounted to 1771l. 3s. 9¼d. So that the clear revenue from the dutchy ands amounted to 7324l. 8s. 0d. In the reign of James I. he revenues belonging to the Prince of Wales, from the lutchy of Cornwall, the principality of Wales, earldom of Chester, and various other lands, amounted to 100,000l. per nnum, being *a clear rent from lands*. In the troubles that fol- lowed, and afterwards from the various necessities of the Crown, the whole of these lands in the principality of Wales, nd earldom of Chester, were alienated, and the dutchy lands of Cornwall are the only part of these valuable he- reditary revenues which now remain to the heir appa- rent.

The lands of the dutchy of Cornwall being farmed on leases of lives renewable; some for a fine certain, others upon a calculation of the improved value; it is not easy to ascertain the yearly value, which depends upon the falling in of lives. The great number of small rents are expensive in the management and collection. The fines also to be calculated upon improvements, operate directly against all improvements on so precarious a tenure as that of lives. It has therefore happened, that the value of the dutchy has not been improved, in an equal degree with the land around, belonging to private proprietors, unless in situations such as Kennington and Lambeth, where situation is so favourable to improvement. The chief, and greatly improved part of the revenues of the dutchy, is not that which arises from the lands, but that part which arises from the duty upon the coinage of tin, which is under the di- rection and management of the officers of the stannaries, a distinct branch of His Royal Highness's establishment from

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that under which is the management of the lands. O
account of the exportation of this metal to the East Indi
and China, this trade has been restored to a very flourishin
state; and the revenues arising from the coinage are likel
not only to be more steady than formerly, but in all pr
bability will be considerably increased. But as this mode
disposing of the surplus tin is yet in its infancy, it would
too sanguine to calculate upon great expectations. T
give, therefore, an idea of the revenues of the dutchy, t
coinage dues cannot be stated higher than 10,000l. on
average. The landed revenues may amount to 5,000l. p
annum.

But the revenues arising from the lands, annually, cann
be accurately ascertained, for the reasons I have stated, t
ancient quit-rents being extremely small, and the prof
arising from the fines casual and uncertain. Much attenti
has been lately paid by the gentlemen in whose departme
the business of calculating the fines lies, to ascertain the r
improved value of the different estates; and by their di
gence and fidelity I have reason to believe, that the re
nues arising from the dutchy lands are considerably i
proved; and that, I am persuaded, without doing any thi
which may justly be deemed harsh or oppressive. P
fectly confident, that in as far as the rights of his Ro
Highness the Prince of Wales extend, the Council of
Royal Highness pay every proper attention, and give ev
fair encouragement to propositions for the farther impro
ment of the territory of the dutchy of Cornwall. I fla
myself it will not be considered as too presuming, if I p
sent, for the information of the Board, such measures as h
been suggested by the gentlemen of the county, as in th
opinions tending to be of great mutual advantage to the ill
trious personage who now holds these lands, and to the pub

The first proposition which has been suggested to me
that a sale should be made of the whole of these lands,

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produce to be laid out on the purchase of an estate, and settled by parliament, to the same uses as the present lands of the dutchy have been settled. Secondly, That instead of an entire sale, a commutation be made of those lands held by leases on lives, with arbitrary fines, into ancient dutchy, or a species of copyhold, and the value given for such commutation laid out in the same way as suggested in the proposition for sale. With regard to the proposition, there is little doubt that the dutchy tenants would be willing to pay a much greater number of years purchase for the various chief-rents and lease-holds, than the common market price would allow; and that the produce of such sale might be appropriated for the purchase of such lands as might produce a greater annual revenue, and be more easily improved than a great part of the dutchy lands. But there is an objection of great weight to such a sale, that would naturally present itself to parliament on the discussion of such a question:

That it appears, that from very ancient times, it has been the uniform sense of the constitution of this country, that an independent provision should be settled on the heir apparent of the Crown, in order to enable him to support the exalted rank he possesses, as the first subject in the kingdom. Of this independent provision, consisting anciently of great landed revenues, the dutchy of Cornwall is the only part which now remains unalienated, and which has been so specially settled by the Crown, and so repeatedly confirmed by parliament, that very cogent reasons must be adduced to justify a sale. Perhaps, also, it may hereafter be thought proper by the Crown to settle on the heir apparent an independent provision, as in ancient times; and as the dutchy of Cornwall is the only memorial left of that ancient provision for the heir apparent, parliament would be very careful that any such sale, if it should be proposed, should not tend to diminish the value of the dutchy, as well as the rights of the heir apparent.

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With regard to the second proposition, of a commutation of the leasehold into ancient dutchy, it does not appear so highly objectionable, as the manerial rights would thereby be still kept up. But I am apt to apprehend, that although some would be willing to give a proper value for such commutation, yet it would be by no means general. Those who had full lives would not be ready to give any valuable consideration.

There is, however, a third proposition which is highly worthy serious consideration, and which in particular instances has been much under the investigation of the Council of his Royal Highness, that is, the improvement of such waste lands as form parcel of the dutchy.

SECT. VIII.

WASTE AND COMMON LANDS, IN THE DUTCHY AND COUNTY OF CORNWALL.

THOSE lands in England are denominated waste, which remain in their original uncultivated state, although in many parts of them sheep and cattle are pastured, by those who are entitled to rights in common on those wastes. In Cornwall, as nearly as I have been able to calculate, the proportions of waste and cultivated land stand thus: one-third part of the county is under a regular course of husbandry; one-third is in furze crofts, which are only broke up once

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in twenty-five or thirty years; the remaining third is wholly uninclosed, consisting of marshy grounds, intermixed with rocks and mountains, and in the west, with extensive tracts of waste land, almost plains. This third and last part is almost wholly dutchy land; in particular, all the waste lands on Hengston Downs, Linkinhorn, Caradon; and from thence, extending to those wastes between Five Lanes and Bodmin; also Bodmin Downs, &c. in the eastern part of Cornwall; also the extensive wastes in the parish of St. Agnes, and its neighbourhood, St. Austle Downs, &c. &c.

In all these I have heard of no attempt to improve and inclose, except St. Austle Downs, adjoining to which, Mr. Charles Rashleigh has lately erected a harbour, with a degree of correct judgment and great spirit, which does that gentleman much honour. Instead of building work out a great way into the sea, which was the old and injudicious practice in making harbours, he has, at great expence, excavated the land and rocks inward, by which, when finished, a most commodious harbour will be formed, of great importance to that part of the country, and to the trade passing that part of the Channel.

The harbour of Polmeer, and Mr. Seal's new dock at Dartmouth, furnish two admirable instances of public spirit in individuals, and, considering the disadvantages of local situations, deserve to be ranked with the magnificent docks erected by Mr. Perry at Blackwall.

Adjoining to Mr. Rashleigh's harbour, there is a large tract of waste ground belonging to his Royal Highness the Prince of Wales, which has been granted to Mr. Rashleigh by the Council of his Royal Highness, on terms which do honour to the liberality of the Council, and which will hereafter be a great improvement to the dutchy. This is a striking instance of the advantages which arise from the example of individual enterprise in all parts of this kingdom. Mr. Rashleigh has leased out a considerable part of this waste in

small lots, for which he receives a rent of about seve shillings and six-pence per acre. The occupiers, by th advantage of pilchard salt, and broken pilchards, and dung from St. Austle, and sea sand, will soon be able, at moderate expence, to make these fields worth thirty an forty shillings per acre. This example has awakened ge neral attention; and I have received several proposals fo similar grants, to be laid before the Council of his Roya Highness; and although none of them can boast of so ad vantageous situations, yet all of them will, no doubt, tur out very advantageous to the adventurers, to the improve ment of the county, and of the dutchy.

I am persuaded that there is, at the very lowest calcu lation, 100,000 acres of waste lands in this county, whic may be valued at seven shillings and six-pence per acr which would produce an annual rent of 37,500l. per annun and leave a sufficiency of turbary for fuel, if properly regu lated. What an advantage would arise from such im provement to the force and wealth of this country! there not, in every county almost in England, prodigiou tracts capable of similar improvements? When we loo across the Atlantic, and perceive the weakness of the Ame rican government, insufficient, from the want of an execu tive power, to protect themselves against the incroachmen of the Indians, is it not natural to conclude, that all me will prefer an ancient and settled country, with a free an vigorous government, possessed at the same time of an in finity of resources for trade, commerce, and manufactures In the waste lands of this kingdom, there are sources, bot in the improvement of the soil, and the production of its mine for the employment of additional millions of people. Far fro having arrived at its *acmé* in agriculture and internal im provements, this kingdom may be still considered in its in fancy. Defended as it is by nature, and by the spirit an good sense of its inhabitants, against the attacks of ex

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ternal or internal enemies to its happiness and independence, we may look forward with confidence to a state of prosperity hitherto unexampled in the annals of mankind.

SECT. IX.

WOODS AND PLANTATIONS.

THERE is a good deal of coppice wood in the county of Cornwall, but little timber. Formerly the tin was smelted only with charcoal; and this made them cut down their woods, and keep them in coppice; so that there is not a great quantity of timber; although, from what is to be seen around the seats of many of the nobility and gentlemen, there is no doubt that timber will thrive as well in many parts of Cornwall as in other counties.

The nine ancient parks belonging to the dutchy of Cornwall, which we have mentioned, were all of them covered with large forest trees, and a great quantity of coppice wood. But, when in the reign of Henry VIII. they were disparked, agreeable to the plan he had adopted, throughout the kingdom, for encouraging agriculture, the wood was mostly destroyed; and what remained, has, by want of care, dwindled almost to nothing; and by some mismanagement, the royal intention of rendering the ground more profitable, by being turned into tillage, has never answered.

There were formerly, also, some extensive forests which are now covered with the sea, particularly between the Ram-head and Loo, and between St. Michael's-Mount and Penzance.

In many of the vales on the Tamar, Alan, Camel, Fal, and Fowey, there are considerable quantities of coppice

woods, and a good deal of planting, and some old timber, particularly at Tregothnan, Carclew, Port-Eliot, Anthony, Tehidy, Clowance, &c.

At Trevetho, Mr. Pread has taken a great deal of trouble to raise his plantations, in a situation where they are exposed to both the south-west wind, and also the northerly winds, being the highest ground between the Bristol Channel and St. George's, in that part of the county.

After making a great number of unsuccessful experiments, at a great expence, in order to find out some hardy plant that would shelter the more tender trees, he was led to try the pine-aster fir, from observing that this tree grew well spontaneously, from some cones which happened to be accidentally scattered in one of the fields near his house. The pine-aster is not a valuable wood, nor is the form of the tree beautiful; but it has been found to stand the sea air surprisingly without being injured. This tree Mr. Pread plants on the highest parts, and very thick in the outer rows of the plantations, and within he plants oak, ash, elm, plane, &c. all of which flourish extremely well under this shelter. He sometimes also plants large groves entirely of pine-aster, and when grown up to the height of twelve or fifteen feet or more, he cuts down those in the internal part, and plants forest and other trees of large growth, which all answer extremely well. Mr. Pread made an observation respecting the raising of the pine-aster from seed, that is worth attending to. He found that sowing the seed in spring, as is commonly done by the nurserymen, did not answer his expectations. He therefore threw a number of cones in an inclosed place, where he observed that they opened naturally, and dropped their seeds in the beginning of June, which is the time he has since made use of to sow the pine-aster seeds, both in the fields and in his nursery. A careful observation of the operations of nature, is undoubtedly the foundation of all science, and more particularly of every

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every branch of agriculture. When the famous Brindley was examined before the House of Peers, respecting the Duke of Bridgewater's canal, he was asked by a noble lord, how he had contrived to render the banks of the canal in a particularly difficult part firm? He said, he sowed rushes on the banks. He was again asked, in what season he had sown them? He answered bluntly, "I observed the time that the rushes shed their seed; I sowed them as nature did; could you have done better, my lord?" These little examples may afford hints of similar observation, in a variety of instances. Mr. Pread, who has certainly been very useful to the county of Cornwall, by introducing the pine-aster as a shelter from the severity of the south-west wind, has been followed by most of the gentlemen in the western parts of Cornwall, with great success; and the spirit of planting is spreading very rapidly. Sir John St. Aubyn has lately planted ninety-three acres with a great variety of forest trees, at Clowance, where there is also a great quantity of fine old trees, planted by his father and grand-father, who introduced the beautiful eastern plane into the county, and which is here of a very large size. Sir John St. Aubyn has also planted the pine-aster at St. Michael's-Mount; and it flourishes well, although exposed in winter even to the spray of the sea. At Godolphin there is a very ancient plantation near the house, and indeed in so many other places, that it is obvious it is not owing either to soil or climate, that there are so few trees in Cornwall. It is particularly defective in not having trees, and hardy shrubs, or quicks, in the hedge-rows which divide their fields. The sod fence, which is the common mode of dividing them, affords a dreary prospect, and is a very indifferent shelter for cattle or sheep.

Here again is a vast object for the advantage of the public, and of individuals, that of planting those waste lands that would not return a profit by tillage. Plantations of wood are always sure to answer best by being made on a

large scale. Planting 30, 40, or 50 acres together, saves expence in fencing; the trees shelter each other, and encourage each other's growth; and in ten or twelve years time the weeding and pruning for faggots will begin to make no trifling returns in a country where fuel is so very scarce as in Cornwall.

SECT. X.

FRUIT TREES.—CIDER.

FRUIT-TREES are every where found to thrive, particularly the apple; and in the eastern part of the county a great deal of cider is made, and of very good quality; but very little is produced to the west of Truro. It is a practice in Devonshire, of several gentlemen, to plant extensive nurseries of apple-trees, and give them away to any of their tenants, who will engage to inclose and plant a piece of ground for an orchard; an example very deserving of being generally followed in both counties.

The mulberry-tree flourishes well in Cornwall, in the western parts, and the fruit ripens in perfection. The President of the Board has, on this account, recommended the experiment of breeding silk worms; but, from some experiments which have been made, I am afraid the climate is too moist for the growth of silk in any great quantity.

SECT. XI.

SEED TIME AND HARVEST.

WHEAT is sown in the end of September, and from that to the end of October. The harvest is about the first week of August. Oats are sown in February, and barley in the beginning of March. In *Mullion*, and some parishes near the Lizard, they have sown barley, and in nine weeks, and often sooner, had it reaped and threshed. This is owing to the warmth of the situation, and the natural mildness of the climate. They have a practice in Cornwall of putting up their wheat, barley, and all other kinds of grain, in the field, into what is called arrish-mows. The sheaves are built up into a regular solid cone, about twelve feet high; the beards all turned inwards, and the but-end only exposed to the weather. The whole is finished by an inverted sheaf of reed, or corn, and tied to the upper-rows. This custom is owing to the inconstant weather, and is considered as a better way of preserving the grain. An intelligent farmer has made, in my opinion, a great improvement on this. He observed, that the corn brought from these mows into the barn, or the farm-yard, lost much in the carriage: he, therefore, built small ricks in his farm-yard, with an opening, or funnel, through the heart, and communicating with another funnel from the side, by which means the whole is kept well ventilated; and being near the barn, he does not lose in carriage. This gentleman, Mr. Grosette, near Truro, has also made another improvement, which deserves to be imitated, in saving his clover and hay, by stacking it when half-made, and putting between the layers old straw, which prevents its heating, and imbibing also the juices of the clover; and rye-grass is greedily eaten by the cattle, cut from the stack along with the hay.

Another

Another improvement has also been suggested to me
stead of placing the dry straw in layers in the ricks, to s
it amongst the hay and rye-grass in the field, and after
stack it as before. This mixes it more completely, and
prevents it from heating.

SECT. XII.

GENERAL OBSERVATIONS ON THE MEANS OF IMPRO
THE AGRICULTURE OF THE COUNTY OF CORNWA

I HAVE already stated the circumstances which le
inhabitants of this county to employ their capital in m
and the various branches of trade connected with it, i
ference to agriculture. The maritime situation of the
also offers to them the various branches of the fisher
another object for the attraction of their industry,
diverts their attention from the operations of husb
These two great objects of the mines and the fi
form, throughout almost every part of the county, t
mary pursuits of the inhabitants. Agriculture is
secondary consideration. Seldom do you find a ma
pital and industry solely directed to the produce
plough. The division of labour has been well explai
Dr. Smith, in his admirable book on the wealth of n
to be a great source of productive revenue. It ca
doubted, that if the husbandman was to employ his
and industry in improving his breed of sheep and catt
cultivating his lands, it would tend much more
advantage, than adventuring in the mines and the fi

Board of
thinks
W. M.

which ought to be left to those who apply all their skill and industry, as well as capital, to these objects.

Agriculture must be practised as a trade, to render it either profitable to the individual, or to supply superabundance of produce to the community. It is another question, which has been much agitated, whether that trade is best carried on by small tenants, or by extensive farms, managed on a great scale, with a large capital. Without entering into an investigation of a subject which has already employed some of the ablest writers upon political economy, I shall only observe, that this question, like many others, cannot be determined on general grounds, without having reference to local situations and circumstances, which may affect one part of the kingdom more than another.

The business of fisheries, and of mining, cannot possibly occupy, from their nature, the whole time of individuals, and in so remote a county as Cornwall it is proper they should be encouraged to cultivate little farms of their own, for the more easy subsistence of themselves and families. But it would be very desirable, that there were an intermixture of large farms, to hold out an example of proper cultivation to the smaller tenants, and to supply superabundance, which, perhaps, cannot be produced equal to the demand of a manufacturing and commercial nation, without agriculture is carried on upon a large scale, and employing extensive capitals.

Premiums for the best breeds of cattle and sheep, and for the greatest number of roods of fencing and draining in particular districts, would have great effect in encouraging agriculture in this county, in which it would be a great thing if Government would allow a sum to be distributed by the Board of Agriculture in aid of the local subscriptions in the less improved and more remote counties.

As to tithes, the whole of that subject is of great importance, but would require much more attention than I could possibly give to it, in order to enable me to form any decided judgment on the subject. I can only say, in justice to the very

See this mark on the other side.

owey, on the south-
to be made of a suffi-
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ur of Padstow, as may
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nd the ground through
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n order to form a pro-
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the trade arising from thence; and they can afford such an extra expence more easily, as from the natural excellence of the harbour of Fowey, they will have little or no extra expence on the south side. This canal, if made of a proper depth for large sea-built vessels, will enable all vessels from Wales, Bristol, &c. to avoid the dangerous and circuitous passage round the Land's End, which will be of great importance to the trade of that part of the kingdom, and enable the farmers, on the southern coasts of Devon and Cornwall, to purchase culm for burning their lime at a much cheaper rate than heretofore. The conveyance also of sea-sand, and other articles, coals also for the mines, will thereby be facilitated, and be attended with many other advantages to agriculture and commerce, which would take up too much time here to enumerate. I shall only add, that having examined the different lines proposed for making this communication, I can take upon me to say, that a navigable canal from the river Padstow to that of Fowey, is practicable, and at a moderate expence; and that I hope the gentlemen who have brought it forward will proceed with spirit, and determine upon making it on the largest and most generally useful scale for the trade of that part of the kingdom; being thoroughly convinced, that although the expence will be much greater at first, it will thereby, in the end, return them a greater profit for the money so laid out. The distance may be from eight to ten miles; there will be, however, a considerable lockage necessary; but I think the summit may be greatly reduced by cutting down.

Another canal for boats was also set on foot last year by Lord Stanhope, from Bude Haven by Holsworthy, and from thence towards Hatherleigh, in Devonshire, chiefly for the conveyance of sea-sand to the internal parts of the country; but I understand the line is not yet agreed upon. A canal has also been talked of from the river Hele, on the north,

to Mount's-Bay, on the south; a distance of not more than four or five miles. The summit here is very short, and, I imagine, might be cut down so as to render the lockage very easy indeed. The ground, on account of the great number of mines and lodes, would perhaps be difficult to hold water: it is, however, an object deserving an accurate investigation. There is a sufficiency of water, which may be brought to the summit. Other canals of communication might easily be made, which would save a vast deal of land-carriage in the mining part of Cornwall, and be a vast advantage in supplying the mines, and carrying their produce; for which purpose, at present, they are obliged to keep an immense number of small horses and mules, which would then give way to the more profitable stock of sheep and cattle. A great advantage will arise to this county from the Swansea canal, which will tend to keep down the price of coals at that port; and if, by small canals, this necessary article could be conveyed to the internal parts, at an easy price, the poor might be supplied with fuel so low as to preclude the necessity of paring the surface of the waste grounds to supply themselves with fuel, thereby destroying its fertility; and these extensive wastes might then be converted into arable and pasture lands, to the great advantage of the community. As, tending to the improvement of the county also, it would be desirable to have more harbours on the northern coast, opposite to Wales. One, viz. at St. Agnes, is now building under the sanction of Parliament, by a joint stock company formed for that purpose.

The communication between the copper and tin mines of Cornwall, and the coal mines of Wales, is most important. The attention paid by the representatives of this county to the proposed communication with the port of Swansea, demands the warmest thanks of the people of Cornwall.

CONCLUSION.

THE advancement of agriculture in the county of Cornwall is an object of very high importance with regard to this county, in so far at least as to afford a regular and constant supply to that part of the county, where the people are chiefly employed in the business of mining. This may be done in two ways; by improved modes of cultivating the land already inclosed, and under a course of husbandry, and by inclosing and improving the waste lands of the county, in as far as that can be done without bearing hard upon the rights exercised by individuals, and sanctioned by custom. There is in both these ways vast objects for the exertion of the industry of the people, and room for the beneficial employment of vast numbers of people. To enter into the detail of these circumstances, and to point out the particular objects, and various extent of these objects, cannot be included in this sketch. From the information which will no doubt be conveyed to the Board on these subjects, from the intelligent individuals of the county, and from the very respectable Society of Agriculture lately established, much interesting information may be expected. I have only to regret, that I have not been able to do sufficient justice to the subject; and that from the little time I had to make my survey, I have not had it in my power to describe particularly the operations of many public spirited individuals: and I thought it would look too much like vanity in me to mention their names without doing honour to their works. I have only to add, that the great civilities and attention I met with to the objects of the Board, demand my warmest thanks, and afford, at the same time, the highest hopes that the Board will meet with every aid from the gentlemen and the inhabitants of this county, in the promotion of their public spirited endeavours to improve the agriculture of the kingdom.

FINIS.

GENERAL VIEW

OF THE

AGRICULTURE

OF THE COUNTY OF

RENFREW.

GENERAL VIEW

OF THE

AGRICULTUR

OF THE COUNTY OF

RENFREW,

WITH OBSERVATIONS ON THE MEANS OF ITS IMPROV

BY ALEXANDER MARTIN,

FARMER, OF SALTON, IN MID LOTHIAN.

Gt Brit

DRAWN UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULT
INTERNAL IMPROVEMENT.

LONDON:

PRINTED BY C. CLARKE.

M.DCC.XCIV.

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v.9
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ADVERTISEMENT

THE following valuable communication, reſpecting
of huſbandry in the county of RENFREW, and the mea
ment, drawn up for the conſideration of the Board
now printed, merely for the purpoſe of its being cir
order that every perſon, intereſted in the welfare of t
have it in his power to examine it fully before it is
therefore requeſted, that any remark, or additional ob
may occur to the reader, on the peruſal of the followi
written on the margin, and tranſmitted to the Board of A
Office in London, by whom the ſame ſhall be prope
and, when the returns are completed, an account will
the ſtate of agriculture in RENFREW, from the informat
lated, which, it is believed, will be found greatly ſupe
of the kind, ever yet made public.

The Board has adopted the ſame plan, in regard
counties in the united kingdom; and, it is hardly
will be happy to give every aſſiſtance in its power, to
may be deſirous of improving his breed of cattle,
trying any uſeful experiment in huſbandry.

TO THE READER.

ted, that this paper may be returned to the Board of Agri-
e the firſt of March next.

y neceſſary to add, that the Board does not conſider itſelf
or any fact or obſervation contained in theſe reports, which,
e printed and circulated, for the purpoſe merely of procuring
ormation, and of enabling every one, to contribute his mite,
ement of the country.

nuary, 1794.

INTRO-

INTRODUCTION.

EXTENT, &c.

THIS county, which is one of the ſmalleſt in Scotland, is computed to be about twenty-four miles in length, and twelve in breadth. It is full, however, of towns and populous villages; in particular, the towns of Renfrew, Paiſley, Port Glaſgow, and Greenock; and the villages of Pollockſhaws, Bridge of Johnſton, Lochwinnoch, &c. The number of acres, it is believed, is fewer, in proportion to the number of inhabitants, than, perhaps, in any other county of Scotland. This naturally accounts, for the greater quantity of land, being kept in paſture than in tillage, which will more fully appear in the courſe of the following obſervations.

The population, in 1755, amounted to 26,645. It is now above 50,000, and, probably, much on the increaſe. We ſhall conſider this county under three diſtinct heads or diviſions.

FIRST DIVISION.

The burgh lands, belonging to the town of Renfrew, contain about one hundred acres. Part of theſe are incloſed; but, notwithſtanding their very favourable ſituation for manure, are far from being under good cultivation. The open fields, which are neareſt the town, are a light ſoil, and exceedingly exhauſted by alternate crops of potatoes, ſucceeded either by wheat or oats. Barley, graſs ſeeds, and turnips, are entirely omitted. It is ſuppoſed that the proper rotation for ſuch a ſoil would be, 1, turnips, or potatoes, well dunged; 2, wheat; 3, clover; 4, oats.

The mode of conveyance acroſs the Clyde, by the new ferry, belonging to the town, is very ſingular, and particularly convenient. It is believed that there is nothing of the ſame conſtruction in Britain. It is made in the Dutch manner, and can admit carriages to paſs over without unharneſſing the horſe. It is of great utility in carrying lime ſhells from this county to Dumbartonſhire. A ſketch of the boat is herewith annexed.

Mr. Spiers, of Elderſlee, is increaſing his beautiful pleaſure grounds at *Inch*, by taking in a large field, which, though conſiſting of a very wet and thin ſoil, he is improving, by alternate crops of turnips, oats, and graſs ſeeds.

The Inchinnan and Portmauld fields, are in very good condition, chiefly owing to the rich manure they have from the diſtillery at Portmauld. The rotation of crops are, 1, wheat after fallow; 2, peaſe and beans, broad caſt; 3, barley; 4, hay; 5, hay; 6, oats.

Mr. Ord's farm, of Brownfield, the property of Lord Douglas, containing three hundred acres, is all regularly incloſed with thorn hedges, in good condition. It is a flat *carſe* ground, kept as dry as the nature of the ſoil and climate will admit, by ſloped *gaws*, or open drains, cut in right angles with the ridges, from the middle of the field to one

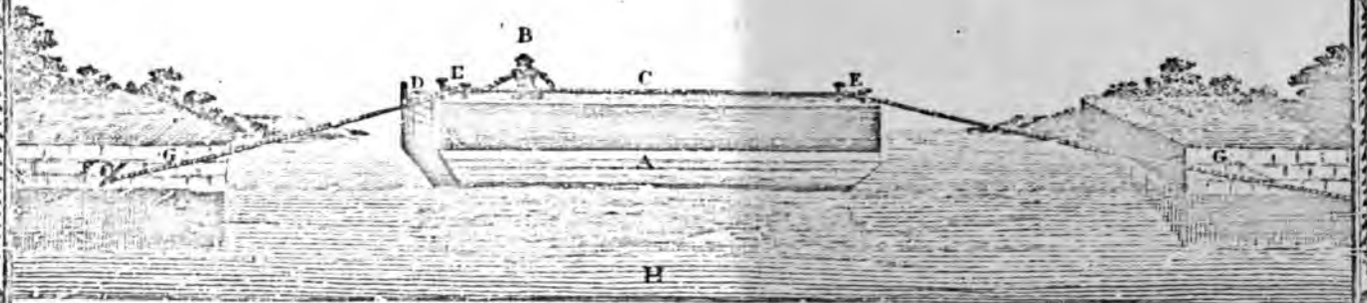


FIGURE of a FERRY BOAT upon the RIVER CLYDE,

AT RENFREW.

A *The ferry Boat.* E *The Rollers for conducting the robe.*

ſide or the other. The width of the drains is from twelve to twenty-four feet, as the declivity requires.

This is ſometimes done when the field is in graſs; but more frequently when in ſummer fallow.

The earth taken from theſe open drains, is either made into compound dunghills, or thrown into the hollow parts of the field.

The common rotation of crops, on Mr. Ord's beſt fields, is, 1, fallow; 2, wheat; 3, barley; 4, beans or peas; 5, oats; 6, hay; 7, hay; then paſturage for five years.

This farm and neighbourhood will receive much benefit by a new bridge, of three arches, over the Gryfe, now finiſhed at the expence of 1400l. raiſed by ſubſcription. From this bridge a new road is now making to Paiſley, at 2l. 10s. 6d. per fall.

The lands on both ſides of the two *Cart* Rivers, ſo called, are well incloſed, and in good condition. Being in the immediate vicinity of Paiſley, they are let at about 2l. 2s. per Scotch acre.

Their common rotation of crops is, 1, oats from graſs; 2, potatoes or barley, dunged; 3, oats, with five pounds of red clover, and three firlots of rye graſs; 4, hay, for two years; 5, and 6, paſture; the laſt covered with compound manure.

The lands of Fulwood, completely incloſed and well cultivated thirty years ago, now the property of Mr. Spiers, of Elderſlee, rent about thirty ſhillings per acre.

The rotation pretty ſimilar to the former article, though much farther from manure; and no ſummer fallow being in uſe, the lands are in worſe condition than they were.

The fine ſoft lands of Howſton, the property alſo of Mr. Spiers, appear to lie rather in an uncultivated ſtate; though, on the other ſide of the Gryfe, they have the example of Mr. Cuningham, of Craigends, managed by Mr. Baillie; which, within theſe ſeventeen years, have riſen near three rents, by good management.

Mr. Baillie begins his improvement with, 1, fallow or tur-

nip, manured with dung or lime; 2, barley, with ten pounds of red and four pounds of white clover, and half a boll of rye graſs; 3, hay. The lands are then let in paſturage, at 30s. per acre; and are allowed to continue in that ſtate longer or ſhorter, according to the goodneſs of the ſoil.

Upon the ſame eſtate, Robert Roger farms one hundred and fifty acres, at 1l. 5s. per acre; all well incloſed with thorn hedges, and well kept.

Next to Mr. Porterfield, of Fulwood, he was the firſt farmer that begun, thirty years ago, to introduce ſummer fallowing; which is abſolutely neceſſary in this county, when the lands are to be improved.

He has now, however, left off this plan, from his immediate vicinity to the bridge of Johnſton; where the preſent demand for milk and butter has induced him to occupy his land, for the moſt part, in paſture. He has the moſt complete farm houſe and office houſes in the county.

In the neighbourhood of the populous town of Paiſley, a great number of acres are occupied as gardens, and fields for bleaching, at from 3l. to 5l. per acre. This town is remarkably clean, for a manufacturing place. The inhabitants are attentive to collect every ſpecies of manure for the uſe of agriculture.

Steelyards are fixed at every toll bar in the neighbourhood, to prevent carts being overloaded. One thouſand five hundred weight is allowed for a cart with one horſe; all above to pay double toll.

SECOND DIVISION.

A part of the Abbey pariſh and pariſh of Eaſtwood may form a ſecond diſtrict of this county.

The nature of the ſoil, rent, and general rotation of crops being nearly the ſame, need no repetition. Theſe lands are beautifully interſperſed with ſmall riſing hills, yet are gene-

rally of a thin clay ſoil, nearly all incloſed with thorn hedges, appearing not to be well kept. The general run of rent is from 1l. 8s. to 1l. 10s. per Scotch acre.

Although theſe lands are not ſo much adapted for graſs, as the pariſh of Mearns, and that neighbourhood, yet, their vicinity to the towns, for dung, and a continued demand for every commodity, that graſs can produce, induces them to have about one half only, in tillage, which half ſeems to be very ill managed; 1, their graſs grounds, having been manured before taking up, either with dung, or compound earth, and lime laid on the ſurface, are ſeldom ploughed before the end of March, and then done with three horſes, in general, with the Scotch plough; though ſome few have introduced Mr. Small's chain-plough; 2, oats; 3, barley with dung, ſown with four pounds of red clover, two of white, and three firlots of rye graſs per acre; 4, and 5, hay; then five years paſturage: there are however, ſome few exceptions to this very bad plan.

The Rev. Mr. Mylne, of Paiſley, farms 150 acres, from the Earl of Glaſgow, at 1l. 10s. per acre, the greateſt part of which is low deep land, requiring much draining, now carrying on in the beſt poſſible manner, about three feet in depth, two feet and a half in breadth, ſloping to one at bottom, which is kept open, by thin ſtones, leaning on one another, and covered over with ſmaller ſtones, till within a foot of the ſurface, then covered with ſtraw and earth. Other parts of Mr. Mylne's lands are covered with large whin ſtones, which he has at a great expence blown with powder, and carried off the grounds.

His implements of huſbandry are all of the beſt kind. The rotation of his crops, is; 1, fallow completed with five ploughings, manured with dung or lime; 2, barley, ten pounds of red clover, half a boll of rye graſs; 3, hay; 4 oats.

Mr. Mylne has not as yet gone much into paſture, as his hedges are young. From his known abilities in the agricultural line, much improvement is to be expected.

Mr. Wilſon, alſo, ſteward and factor for the Earl of Glaſgow, has juſt begun to improve a ſmall farm; built a farm mains very complete, and has a new and well contrived cloſe for dung, formed in a circle, and ſunk four feet below the ſurface. The common dunghills of the county are generally upon declivities, not with half litter enough to retain the juices.

The incloſures and grounds of Sir John Maxwell, at Pollockſhaws, in Eaſtwood pariſh, are moſtly in graſs; they rent from 1l. 10s. to 2l. per acre; though they ſeem to be in great want of draining. Sir John had about thirty acres in potatoes. This crop brought him above 12l. per acre after oats, from long prior paſture. Theſe acres were to be dunged from Glaſgow, forty carts, ſingle horſe, at 1s. 6d. per cart load, the diſtance being three miles: to be ſown with wheat and graſs ſeeds.

Sir John and Mrs. Montgomery of Auldhouſe, his aunt, have one hundred acres well ſituated for watering, and all in paſture; which mode of improvement is not yet attempted.

Here alſo are two hundred acres of natural wood, well kept, and annually productive. This is not the caſe with one hundred acres on the other ſide of the pariſh, the property of the Earl of Eglington; which, when young, had been left expoſed to cattle. His lordſhip's tenants are allowed to cut *at will*, and without ſyſtem, as much wood as they require for their houſes; which are but poorly conſtructed; and their ſyſtem of huſbandry is reckoned the worſt in the county, being 1, oats; 2, oats; 3, barley, with graſs ſeeds, four pounds of red clover, two pounds of white, three firlots of rye graſs; two years hay; five years paſture.

Two excellent turnpike roads, are already begun to be carried through the pariſh of Eaſtwood, in different directions. They are made in a very ſubſtantial manner, with a covering of lime ſtone, broke to one pound weight, and laid, four inches thick, on the old road, and ſix inches where the hol-

lows

lows were raiſed, which are many.* Several heighths have alſo been levelled. The former bridges are widened in proportion to the breadth of the road. The parochial roads have been, for the firſt time, attended to, during this year, with ſpirit.

THIRD DIVISION.

This third diſtrict may include the contiguous pariſhes of Mearns, Eggleſham, Nielſton, Lochwinnoch, Kilburchan, Erſkine, and Kilmalcolm; all which have a ſtriking ſimilarity of ſoil, rotation of crops, &c. The farmers have ſeldom more than one-third in tillage; the remainder is kept in paſture, for milk cows. Though the lands of theſe pariſhes ſeem peculiarly well adapted for ſheep paſture, none of them are ſo occupied, excepting ſome incloſures about gentlemen's ſeats, and two parks, in the pariſh of Nielſton, the property of Mr. Spiers, of Elderſlee. Theſe lands are moſtly incloſed with thorn hedges; a few with four feet ſtone *dyke wall*, and a ſmall *galloway cape*; which is formed by laying a few rough ſtones on the top.

In the pariſhes of Mearns and Kilmalcolm, there are a few with an *aha*, or ſunk fence, three feet high, faced with thin ſtones; theſe are covered an inch or two with clean good earth, on which the thorns are laid, which are covered with more earth, then a foot of ſtone, with a ſmall cape of ſod.

For numerous beautiful graſs knows (ſmall green hills) the pariſh of Mearns can ſcarcely be equalled. It is all incloſed. The parks or incloſures conſiſt of from eight to twelve acres; renting from 1l. 10s. to 2l. They are ſtocked with the fineſt milch cows any where to be ſeen; moſtly of a brown and white colour; purchaſed chiefly in Ayrſhire,

* The ſtuff collected from a road, made of ſuch materials, muſt be extremely valuable, as manure.

when

when in calf, at from 8l. to 10l. each. They never breed cattle in this part of the country; but always ſell their calves, when dropt, at from 4s. to 6s. each.

From this pariſh there is an excellent turnpike road, of three miles, to Glaſgow; where they have a ready money market for their great quantities of milk and butter. Their butter, ſalted in kits, brings from 10d. to 11d. per pound, and will keep ſweet for a whole year; owing to the goodneſs of the paſture, and their great attention and cleanlineſs in the management of their dairy. Twelve of theſe ſmall cows, will yield, for five months, in ſummer, one hundred and twenty pints of milk each day; which churned milk ſells at one halfpenny per Scotch pint: and, for four months in autumn, their milk, though in the uſual proportion diminiſhed, increaſes in value by one farthing per pint, beſides more and better butter. Their butter, being all made from milk, they churn every day in ſummer; in autumn four times a week. Their hand churns will hold near two hundred pints, which they only half fill, to give air. The ſtaff, having three wings, turns with a handle, like corn fanners: when they can command water, they make uſe of it for churning, the churn lying horizontally, which ſaves the labour of two ſervants.

A cow, of eighteen ſtone weight, will yield five pounds of butter per week, at a medium, for the whole ſeaſon.

About one half of this pariſh is the property of ſmall heretors, whoſe attention is ſo much engroſſed by their paſture and dairy, that their tillage ſeems to do them no great credit. After about 7 years paſturage, with great reluctance, they take up their grounds with, 1, oats; 2, oats; 3, barley and graſs ſeeds, 5 pounds red clover, and 3 firlots of rye graſs; 4, hay. Ordinary paſturage afterwards.

A crop of turnip would be moſt uſeful as a ſecond crop for their cows when in calf.

They have a valuable common of 1600 acres, which hitherto has been only of uſe to a few ſmall heretors upon its borders, who have during 30 years oppoſed the diviſion of it.

The other proprietors of the pariſh are now trying to effect this diviſion. If it were incloſed, even in its preſent ſtate, without cultivation, it is ſuppoſed that it might be rented at ten ſhillings per acre.

In the pariſh of Eagleſham, the mode of management is nearly ſimilar. The earl of Eglington is ſole proprietor. All the lands are incloſed and rented at from 1l. to 1l. 5s. per Scotch acre. They are ſo late of ſowing their ſeed, that a park of 30 acres of fine oats was on the field in ſhocks, the laſt week of October. A good deal of corn in the county was *butted*; which is done by putting two or more ſhocks together in a conical form.

The earl of Eglington has planted ſeveral clumps of trees, about 20 acres each, on the higheſt grounds of that pariſh to the ſouth, which are thriving well. His lordſhip's tenants are bound by leaſe to take only two white crops. The ground afterwards to lie 7 years in paſture.

In the pariſhes of Nielſton, and Paiſley Abbey pariſh, Mr Fulton of Hartfield has lately purchaſed an eſtate of 3000 acres; an excellent field for improvement; a conſiderable part of which is well adapted for ſheep paſture, and the remainder well calculated for being of pared and burnt. After which he purpoſes to have, 1, turnip; 2, early oats; 3, graſs; then paſture for 7 years. This plan is to be tried the enſuing year, by an Eaſt Lothian farmer, who is to have every encouragement which the proprietor, as one who wiſhes well to the intereſts of his country, can give. Mr. Fulton has built a very complete farm-houſe and offices, and in a very ſpirited manner is now making a road to Paiſley-market above 4 miles, and another ſouthward near 3 miles, to the Lime-Kilns.

In 4 years, he has engaged to purchaſe 400 chalders of lime for his tenant, who is bound to follow the above mentioned rotation.

Upon this farm of Hartfield is now building a reſervoir, for the

the behoof of the manufactures at the bridge of Johnſton, about two miles hence. A ſmall ſtream iſſues from a moraſs, which, when collected, will cover about 30 acres of ground, for which the proprietors get a very moderate allowance. This reſervoir is mounded by two ſtrong walls of ſtone and lime, about 6 feet broad, at the diſtance of 20 feet from each other, in a circular form, the *convex* part being oppoſed to the water. The ſpace between the walls is filled up as is uſually done in the Forth and Clyde canal.

Towards the north of the extenſive and high variegated pleaſure grounds of Mr. Macdowall of Garthland at Caſtleſemple, (which contain 470 Scotch acres of wood, and 430 of water,) a large farm is laid off by Mr. Taylor, his land-ſteward, in the very beſt ſtile. The ſheep-parks are remarkably well incloſed with ſunk fences. The dry grounds of this farm are under the following rotation.

1, Turnip; 2, barley, ſown on the ground quite flat, without any appearance of a furrow, or ridge, and graſs-ſeeds, (red clover 6 pounds, and 4 pounds white, half a boll of rye-graſs); 3, hay; 4, paſture, till the dry ground begins to fog, and the lower grounds ſour, which the laſt are very apt to do, even though well drained.*

On the eſtate of Erſkine, the property of lord Blantyre, plantations and hedges are very thriving, and the high roads in excellent condition; Mr. Dickſon, his lordſhip's ſteward, rents the incloſures, which are in excellent cultivation; he complains much of the annual rye-graſs, as ſeveral farmers of the county alſo do. This graſs is ſaid to have been introduced by the late lord Eglinton, to prevent his tenants from cropping their lands with hay for two years; they might get quit of it, by the help of a top dreſſing, and preſerving the ſeed of the ſe-

* The fog on the dry ground has been deſtroyed, by laying a proper quantity of lime on the ſurface, which is a practice to be adopted where dung cannot be procured.

cond

cond year, as there is always a mixture of perpetual ſeed among it, which is ſomewhat ſmaller than the other. Mr. Dickſon, on his farm had a moſſy bog which could not well be drained. He ſlit, however, ſome fir-trees, which he was weeding out from a plantation, and nailed two of them together in a triangular form, laid them in a drain, which was cut very deep; filled the opening above with the branches of the trees; and covered the remainder with ſod. This method has had the deſired effect, and has ſtood many years: from the larix of 22 years old, he has planted ſeedlings on the top of an Aha dyke, which form an excellent fence, and appear very beautiful.

Boyd Alexander, Eſq. of Southbar, has, within theſe few years, completely dreſſed two hundred acres of land, one half of which is for ſheep paſturage, finely incloſed with faced ſtone dykes. One of the ſheep parks, was lately a moraſs, not worth 1s. 6d. per acre, and is now rented at 1l. 10s. Having ſo well improved theſe lands, he is waiting, with impatience, for the expiration of ſome leaſes of the plain below, of which he is alſo proprietor; which, at preſent, form a ſtriking contraſt with the higher grounds. He is very active, as well as the other gentlemen in this county, in making public roads, particularly one along the banks of the Gryfe, from Houſton towards Inchinnan Bridge, now forming; another acroſs the plain, leading to the great road from Glaſgow to Greenock.*

The incloſures of the Earl of Glencairn, at Finlayſton, ſeem to have been in a ſtate of improvement; but are now, from want of attention in draining, &c. in a ſour and bad condition.

Adjoining to Finlayſton, is a tenant of his lordſhip's, who

* The money which has been, and will be, expended during the years 1793 and 1794, in making new turnpike roads, in this county, will amount to above 20,000l. ſterling; and the private roads are improving rapidly, in conſequence of an act of parliament, obtained three years ago, for converting the ſtatute labour into money.

is bound by his leaſe to raiſe turnips; the benefit of which, has far ſurpaſſed his expectations, and he has, this year, an abundant crop. Laſt year, by means of turnip, he doubled the price of his cattle bought in before winter. This circumſtance, with his great increaſe of manure, might have tempted the neighbourhood in the pariſh of Kilmalcolm, to follow his example, as the ſoil, in general, is ſimilar, and moſt favourable for that crop. None of the tenants in that pariſh, or in the county, have, however, as yet, introduced this important and uſeful branch of agriculture.

The lands in Kilmalcolm pariſh, are moſtly incloſed with dry ſtone dykes, four feet high. In ſummer, before ploughing up their graſs grounds, their cattle are there kept in folds. The dung of the farm yard is then added for manure; and, if not ſufficient to go over the whole field, the remainder is covered over with a compound of earth and lime. The field is ploughed about the end of March, for oats, which are a good crop the firſt year; the ſecond not ſo good; third very poor.

By theſe three ſucceſſive crops of oats, the land is very much exhauſted, and in that ſtate, without graſs ſeeds, it is kept in paſture for ſix years, when the ſame rotation ſucceeds.

In place of this prevailing, though moſt prejudicial mode of management, were they to adopt the following rotation; 1, oats; 2, turnip or potatoes with dung; 3, barley with ſix pounds of red, and three of white clover, and ſix pecks of good rye graſs; 4, hay; afterwards ſix years paſturage, the lands would be put in good condition, their natural fertility would be greatly increaſed, and milk and butter, their favourite objects, would be much augmented, by ſo great an additional increaſe of good paſture for their cattle: after which, the crops would be of double value.

In the immediate neighbourhood of Portglaſgow, Mr. Molliſon, ſurgeon, has dreſſed one hundred acres in a ſuperior manner. He has a leaſe of three nineteen years from the proprietor, Mr. Hamilton, of Wiſhaw. His plantations and

farming-

farming do him very great credit. The ſoil is ſweet, on a rocky bottom. As he has dung from Portglaſgow, at 1s. per ſingle horſe cart, added to his judicious rotation of crops, his farm is in a very rich ſtate. When ſown out into graſs, in the beſt manner, he takes two crops of hay; and ſometimes dungs his hay fields on the ſurface, ploughs them, *dibbles in potatoes*; which ſeems to be a moſt excellent practice; and has, from this mode, the greateſt crops, and the beſt roots, of any in the neighbourhood.

In the vicinity of Portglaſgow, the greateſt proportion of ground, is occupied as gardens, for the uſe of the inhabitants.

The road from thence to Glaſgow, is, for about ſeven miles, ſo very uneven and hilly, that a new road is begun to be made along the coaſt, nearly nine miles in length, which will coſt, including every expence of ground incloſures and making, about 8000l. ſterling.

The road from Portglaſgow to Grennock is exceedingly good, along the ſea beach; but the ſmall quantity of ground between it and the hilly part of the country, is under very bad management. The range of hills running from Kilmalcolm, through the county, along the ſhore of the Frith, is covered with heath, and naturally cold and barren: no experiment has, as yet, been made of plantations, either for wood or ſhelter.

The ſtreets of Grennock, as is the caſe with moſt ſea ports, are exceedingly dirty. It is ſurpriſing that the farmers, either on the north or ſouth ſide of the Frith, are not more attentive to carry off this nuiſance, which they can get at the cheapeſt rate, for the benefit of their grounds.

Sir Michael Stewart, of Blackhall, and Mr. Shaw Stewart, member of parliament for the county, his ſon, have, at their own expence, made an excellent road from Grennock, through their eſtates, to the weſtern boundary of this county.

MISCELLANEOUS OBSERVATIONS.

In this county, owing chiefly to the late ſtagnation of trade, butchers meat is fallen about one-third in price, as are the wages of all the manufacturers.

The ploughmen are all unmarried, and live in the farmers houſes; their wages from 10 to 12l. per ann. The price of day labour in winter is 1s. 4d.; and in ſummer 1s. 6d. In ſummer, they begin to work at 5 in the morning, and finiſh at 6 in the evening. In winter, the hours of working are from 7 to 4; the ploughmen, however, are employed in threſhing two hours or more, before day light during the winter, which practice is general throughout this county. The horſes are of the beſt kind, and draw in a ſingle horſe cart, from 1700 weight to a ton; a few of them only are bred in the county, the reſt are purchaſed from Lanerkſhire and Ayrſhire, at 5 years old, 16 hands in heighth, price about 30 guineas.

Their one horſe carts are very neatly made, and moſtly with iron axles. The trams of the carriage are about 9 feet, 7 inches in length; depth of the cart, 2 feet, width 4 feet, not ſloped from below, ſtrong ſtandards, without ſhillmonts at top. This carriage anſwers exceedingly well for moſt of their ordinary uſes, except in jobbing on the farm, in which a coup cart would be preferable; of which there are none among the farmers in the county.

About 30 years ago, it was uſually calculated, that the produce of the county, did no more than maintain its inhabitants, for one third of the year.

The aſtoniſhing increaſe of population ſince that time, has gone ſtill more beyond the agricultural product; ſo that improvement in this article, to the higheſt degree, ſeems to be one of the moſt abſolutely neceſſary branches of attention to the landholders, farmers, and whole community of this county. For a long courſe of years, their principal attention has been paid to trade and manufactures, to the great neglect of agriculture;

agriculture; though the proprietors in general, have ſhewn a-audable example of improvement upon their incloſures, near o their own reſidence; yet in conſequence of the plan they ave adopted of letting out their lands, into ſmall farms, from 50 to 70 acres (upon 15, and often 19 years leaſes,) their example has not, and probably never will be followed by heir tenants.

I. BENEFICIAL PRACTICES.

The milch cows of this county, in general, are certainly of an excellent kind, and may be tried with the greateſt proſpect of ſucceſs, in other places; and, were they well provided with good winter feeding, and eſpecially turnips, they would greatly improve in ſize and value.

II. OBSTACLES TO IMPROVEMENT.

Where lands are in an uncultivated ſtate, though partly incloſed, a leaſe of nineteen years muſt be too ſhort for a ſpirited well ſtocked farmer. If the proprietors would give proper encouragement to their farmers, to lime ſufficiently (which they can effect at a very cheap rate), obliging them to follow a rotation of crops, and ſow down their land properly with graſs ſeeds, after fallow, turnip, or any other green crop, the moſt conſiderable obſtacles to improvement, in this county, would be removed.

III. MEANS OF IMPROVEMENT.

Over the firſt diſtrict, after five ploughings and three harrowings of ſummer fallow and manure; 1 crop, wheat; 2, beans, peas or clover; 3, barley with graſs ſeeds, ten pounds of

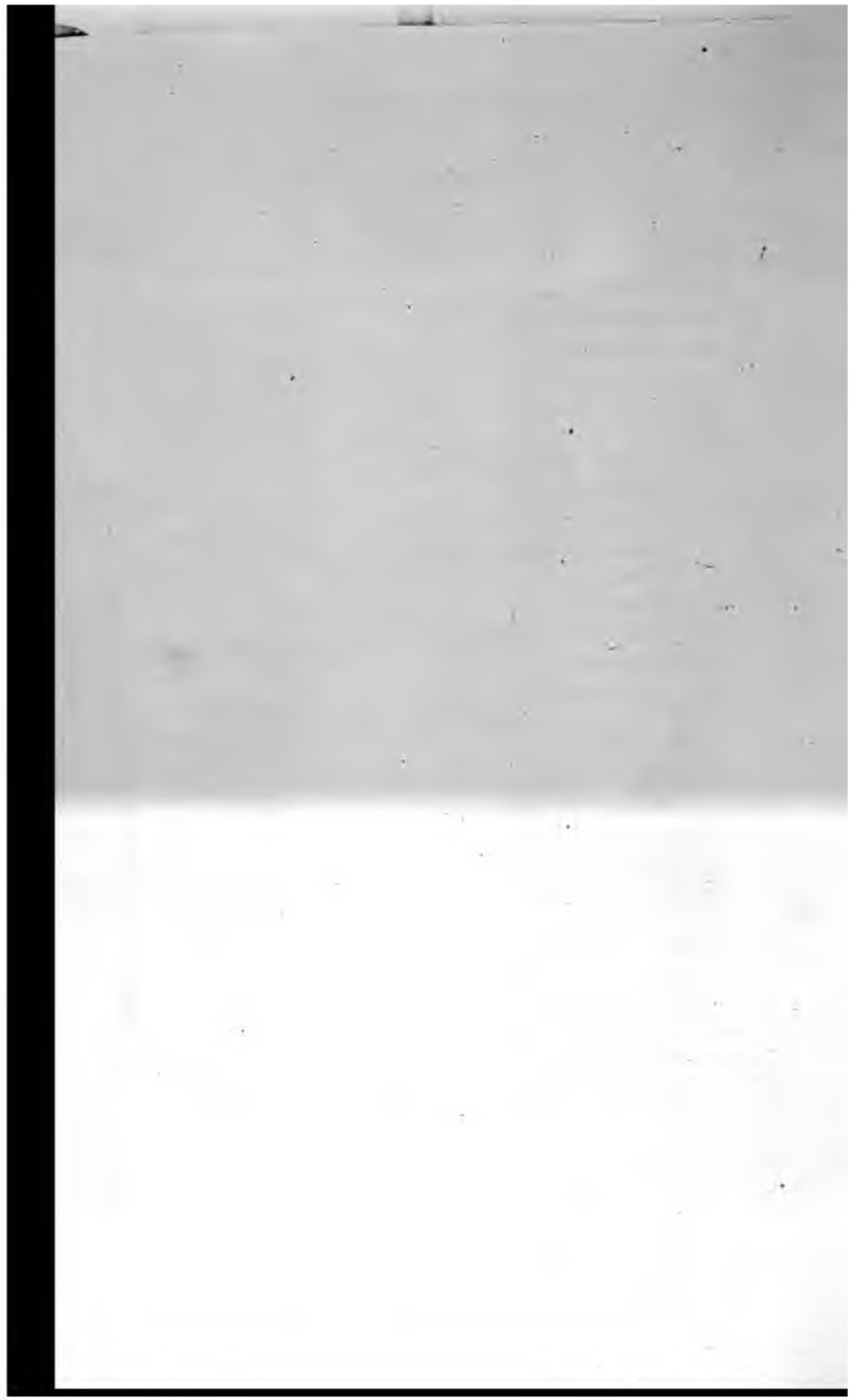
of red clover, ſix pecks of rye graſs; 4, hay; 5, oats; 6, fallow, the ſame ſucceſſion.

As to the other parts of the county, the ſoil in general being ſoft and gravelly, though the climate be wettiſh, the proper rotation ſeems to be; 1 crop, turnip; 2, barley with ſix pounds of red clover and four of white, with half a boll of rye graſs; 3, hay; 4 and 5, paſture; 6, oats of the early red kind, brought into this county by Mr. Dickſon at Erſkine, and found by experience to be luxuriant and productive on the light lands, eſpecially towards the edges of Lamermuir in East Lothian. This ſeed has been long tried, turns well out into meal, and has a great quantity of good fodder: this kind of oat is earneſtly recommended, as peculiarly adapted to this county.

Tares may be introduced with great advantage in Renfrewſhire, as an excellent food for horſes, and a good improvement for the ground. They are found to thrive beſt in a light and dry ſoil: when cut before podding, and are luxuriant, they are the leaſt exhauſting to the ground of any of the green crops.

Theſe obſervations on the agriculture and improvement of Renfrewſhire, are humbly ſubmitted to the conſideration of the Board of Agriculture, and to the correction of the gentlemen and farmers of that county; to whom the ſurveyor was under infinite obligations, for their attention and aſſiſtance. He has endeavoured to condenſe his obſervations on the ſubject, within as narrow bounds as poſſible, the diſtrict, though valuable, being ſmall; and the ſame remarks being applicable to it, which will be found more fully and more ably detailed, in the agricultural account of Ayrſhire.

FINIS.



GENERAL VIEW

OF THE

AGRICULTURE

OF THE COUNTY OF

ELGIN OR MORAY.

GENERAL VIEW

OF THE

GRICULTURE

OF THE COUNTY OF

ELGIN OR MORAY,

BETWEEN THE SPEY AND THE FINDHORN

INCLUDING PART OF

RATHSPEY, in the County of INVERNESS.

OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT,

BY JAMES DONALDSON,

ACTOR FOR THE HON. WM. RAMSAY MAULE OF PANMURE.

UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULTURE AND INTERNAL IMPROVEMENT.

LONDON:

PRINTED BY C. CLARKE.

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TO THE READER.

IT is requeſted, that this paper may be returned to the Bo culture, at its Office in London, with any additional rem ſervations, which may occur on the peruſal, written on the ſoon as may be convenient.

It is hardly neceſſary to add, that this report is at pre and circulated, for the purpoſe merely of procuring farther reſpecting the huſbandry of this diſtrict, and of enabling ev contribute his mite, to the improvement of the country.

The Board has adopted the ſame plan, in regard to a counties in the united kingdom; and will be happy to aſſiſtance in its power, to any perſon who may be deſi proving his breed of cattle, ſheep, &c. or of trying any riment in huſbandry.

London, February, 1794.

INTRODUCTION.

THE boundaries of the county of Elgin, except along the ſhore of the Moray Frith, ſeem to have been determined by political and eccleſiaſtical conſiderations, rather than by natural limits, being in many places interſected by parts of the counties of Inverneſs, Nairn, and Bamff. It will therefore be more diſtinct, in this report, to reſtrict the view of the ſtate of agriculture, to the country between the rivers Spey and Findhorn, including part of Strathſpey in the county of Inverneſs.

The diſtrict between theſe rivers, comprehending the great body of the county of Elgin, is ſituated between fifty-ſeven and fifty-eight degrees of north latitude. It extends from eaſt to weſt, along the ſouthern ſhore of the Moray Frith; its northern boundary, for about twenty four Engliſh miles, becoming narrower, as it approximates the ſources of theſe rivers, till it extends in breadth, only about ſixteen miles, towards its extremity at the ſouth-weſt; and a right line ſtretching ſoutherly, from the ſhore of the Frith to Airmore, gives its mean length about forty miles, making a ſuperficies of about eight hundred ſquare miles, or five hundred and twenty thouſand Scotch acres.

Of this extent, there are more than two hundred ſquare miles denominated the low lands of Moray, lying between

the Frith, and a chain of hills, which ſtretch in a direction nearly parallel thereto, at the diſtance of about eight miles from the ſhore. This may be deſcribed as a champaign country, though diverſified by many gently riſing grounds; which, being all either covered with trees, or cultivated by the plough, form a landſcape, in general greatly ſuperior in beauty, fertility, and riches, to any northward of the Grampian mountains.

The remainder of this diſtrict, about ſix hundred miles in extent, muſt be regarded as a hilly country, divided into numerous fertile valleys, along the banks of the different ſtreams of water, which all terminate in the Spey, Loſſy, or Findhorn; the only rivers in this diſtrict which diſcharge themſelves into the ſea.

RIVERS.

1ſt. The Findhorn riſes in the hills of Strathſpey, Herrick, and Strathern, in the county of Inverneſs; and, after traverſing nearly fifty miles, in a north-eaſterly courſe, through the counties of Inverneſs, Nairn, and Elgin, falls into the Frith at the harbour of Findhorn, about five miles north of the town of Forres.

2d. The river Loſſy has its ſource in the hills, between Dollas and Strathſpey, in this diſtrict; and, running north-eaſterly about twenty miles, falls into the Frith, at the port of Loſſiemouth, ſituated about ſix miles north from Elgin.

3dly. The Spey riſes among the hills, between Lochaber, and Badenoch, in the county of Inverneſs; and after running for about ninety miles in a north-eaſterly direction, falls into the Frith at the village of Garmouth, ſituated about ten miles eaſt from Elgin.

4thly. Though none of theſe rivers are navigable, the Spey and Findhorn are notwithſtanding of great conſequence to the country, on account of their ſalmon fiſhings;

and

and the timber from the foreſts in Strathſpey, is floated down the firſt of theſe rivers to Garmouth.

The rivers Spey, Tay, and Lochy, take their riſe very near one another; and theſe rivers, which after running through courſes, pointing to directions entirely different, diſcharge themſelves into the ſea at Garmouth, Dundee and Fort-William; which ſhews that they have their ſources, in the higheſt grounds within the bounds, through which they paſs.

LAKES.

Although there are many lakes in this diſtrict, yet in an agricultural view, it is neceſſary only to notice the loch of Spynie, and the bay of Findhorn.

The former, of inconſiderable depth, covers about two thouſand acres of rich land. There is alſo a great extent of ground at the weſt of the lake, ſo much on a level with its ſurface, as to be greatly injured by every flood.

The latter, viz. the bay of Findhorn, containing about one thouſand acres of a ſtiff clay ſoil, is only covered by the flux of the tide, while a bar of ſand, which lies acroſs the mouth of the river, would prevent all violence of ſurge upon any embankment that might be formed.

The draining any other lake in this diſtrict could be undertaken only on the view of finding marl.

The ſea has, for near half a century paſt, been making encroachments on the Moray ſide of this frith, between Findhorn and Burgh-head. Some people remember that the boundary of the ſea extended almoſt in a ſtraight line between Burgh-head and Findhorn, where now there is a large bay. Some perſons alſo remember to have ſeen boats building in this place, where, now a large veſſel could ride at anchor; and it is confidently aſſerted, that at high flood, the tide riſes as high as the grounds about Roſile, Kintrea, and the low lands of Duffus, which, as far as can be determined from

a ſurvey of this kind, ſeem only prevented from being covered by the ſea, by the bent hillocks along the ſhore, a defence which cannot be depended on; and this merits the more ſerious conſideration of the proprietors, from the circumſtance of a general traditional report, that at ſome former period the ſea covered all theſe grounds.

CLIMATE.

The diſtrict which is here called the lowlands of Moray, participates in general of the fair weather which prevails over the whole extent of the eaſtern coaſt of the kingdom. It is in this reſpect, moreover, favoured by a peculiarity of ſituation, being a level country, lying between the mountains of Sutherland, and thoſe in the highlands of the counties of Banff and Aberdeen. The clouds are borne aloft by the winds, from the one chain of mountains to the other, and paſs over the ſubjacent plain; which affords no object high enough either to attract, or impede their courſe. This, alſo, together with its vicinity to the ſea, may account for the falls of ſnow being leſs frequent and of ſhorter continuance than in the mountainous parts of the country; in ſo much that the operations of agriculture are comparatively but little interrupted by the inclemency of the weather, and the harveſts are alone accounted precarious from the effects of the winds; there being ſcarcely an inſtance, between the years 1744 and 1782, in which any conſiderable damage was occaſioned by the rains; and in the warm ſeaſon, the heat is always moderated by a gentle breeze, which riſes about noon from the ſea. The moſt uncomfortable weather is towards the end of ſpring, when a froſty eaſt wind often ſets in for weeks together, which, in this country, where there are few hedges, or incloſures, is greatly prejudicial to vegetation. The earlineſs of the ſeaſon here, may be more diſtinctly conceived, from the following ſtatement, of the periods at which the harveſts have commenced, on a particu-

lar farm, not diſtinguiſhed for earlineſs, for the laſt ten years, beginning at

1784	Auguſt	27
1785	September	14
1786	——	20
1787	——	20
1788	——	4
1789	——	7
1790	——	8
1791	——	2
1792	——	6
1793	——	18

In the hilly part of this diſtrict, however, the ſeaſons are conſiderably later, and the harveſts more precarious. The operations of huſbandry are long ſuſpended in winter, by froſt and ſnow, which often encroach far upon the ſpring, while frequent rains, or damp foggy weather in the autumnal months, retard the harveſt and often injure the crop.

It may alſo be obſerved, that the noted rapidity of Spey takes place only during the laſt thirty miles of its courſe. In the country of Strathſpey, this river with all its branches flows through channels nearly level, from which in many ſeaſons, towards the evenings of ſultry days in Auguſt, a moſt pernicious mildew appears to ariſe, which confined by the overhanging hills, hovers over the low grounds, and ſettling on the unripe corn, blaſts the milky ſubſtance of the ear, and ſometimes deſtroys in one night the expectation of the moſt promiſing crop, and which can alone be ſaved either by a briſk wind or a heavy rain, clearing off this clammy vapour before its poiſon is fixed in the ſtem, aſſiſted by the power of the next day's ſun.

This cruel viſitation, which it is believed ariſes from ſtill running water, rather than ſwamps or lakes, is unfelt both in the open country, and on the banks of rapid waters; and

might in all probability be prevented, by deepening the ſhallows or narrowing the courſes of the rivers.

Conſiderable efforts are juſt now making, by the proprietor Sir James Grant, to remedy this miſchief, and by embankments to protect the haughs of Coulnarcail from being overflowed by the river Spey: but it is humbly thought, that the moſt eaſy and efficacious mode of accompliſhing the end in view, would be, by deepening the courſe of the river Spey, at the eaſt corner of theſe haughs, and conducting the water of Dulnan down by the north ſide of the ſtrath, between the mountains, and a ridge of riſing ground ſituated near the bottom of theſe mountains, which could be done at a moderate expence.

SOIL.

The ſoil of a great proportion of the low lands of Moray is a rich deep clay, which under proper management would be equal in fertility to the ſimilar ſoil of the carſe of Gourie. A conſiderable proportion of the ſoil of this county is a deep black loam, and the remainder may be conſidered as light and ſandy, extremely well adapted to the Norfolk ſyſtem of huſbandry. The ſoil of the low grounds, in the valleys of the hilly diſtrict, has been principally formed by the waſhings of the ſtreams, and which more or leſs participates of the qualities of the different ſoils of the low lands, the clay being made much more friable by a mixture of earth and ſand. The loam, often from ſimilar mixtures, is of a reddiſh colour, and the ſandy ſoil, is greatly mixed with gravel, and large pebbles, which in many places abound. In that part of the country where cultivation has taken place on the ſides of the hills, above the reach of the water, the ſoil may be deſcribed as of a mooriſh quality, more or leſs blended with moſs.

TOWNS AND POPULATION.

In this diſtrict there are two royal burghs, Elgin and Forres, ſituated at the diſtance of twelve miles from each other, and both ſurrounded by a wide extent of fertile arable land. The population of Elgin amounts to 2920, and that of Forres to 2400 ſouls; beſides the villages at the harbours of Garmouth, Loſſiemouth, and Findhorn, already mentioned: there are the fiſhing villages of Stotfield and Burghhead, at both of which very commodious and ſafe harbours might be formed, at an expence comparatively ſmall, particularly at Stotfield, where there is a ſandy bay, well ſheltered by a headland on both ſides, to the eaſt and weſt.

In the inland part of the country there are four villages, Urquhart, Rothes, Ballentomb, and Grantown, which may contain from fifty to an hundred houſes in each. The number of inhabitants, from an accurate ſtatement of each pariſh in this diſtriſt, amounts to nearly 30,000 ſouls.

YEARLY VALUE AND MANAGEMENT OF ESTATES.

State of property—In this county, regarded in its political extent; there are ſix proprietors, who poſſeſs from two to ſix thouſand pounds ſterling, of yearly rent each; ten proprietors poſſeſs from five hundred to fifteen hundred pounds of yearly rent; the remainder is ſhared amongſt proprietors poſſeſſing from fifty to four hundred pounds a year; amounting in all to about thirty three thouſand pounds ſterling; excluſive of woods; which may be nearly eighteen hundred pounds ſterling: and ſalmon fiſhing, which may amount to three thouſand pounds ſterling a year. Of the great proprietors, only one or two reſide in the county; a ſmall proportion, therefore, of the annual revenue, ariſing from the lands,

lands, is expended there. This tends to relax the connection, and to diminiſh the intercourſe, between the landlord and tenant, which is not favourable to improvement.

RENT AND LEASES.

The land (except about the towns of Elgin, and Forres, which, from local advantages, gives from two to three pounds) lets at from five ſhillings to one pound five per acre; but the average rent of the arable land of the county, may be accounted at fourteen ſhillings an acre, without eſtimating natural paſture lands.

The rents are paid partly in money and partly in grain; the money is payable at the term of Martinmas, and the grain, or *victual* as it is provincially called, at the term of Candlemas.

The tenant enters on the poſſeſſion of the farm, by having acceſs to houſes, garden, and meadow paſture on the 26th of May; and, afterwards, to the arable land, at the ingathering of the year's crop.

The leaſe, in general, is extended on ſtamped paper, enduring, with few exceptions, for nineteen years. In many caſes, the poorer tenants, who pay but a few pounds of rent, truſting to the honour of landlords, poſſeſs their lands without a written leaſe. The houſes are valued to the tenant at his entry, by perſons mutually choſen by him and his predeceſſor; and they muſt be ſupported, ſo as to be of equal value at the expiration of the leaſe, or the eſtimated damage paid in money. Where new houſes are requiſite, the landlord allows a certain ſum; generally about one or two years rent of the farm; which, in general, is only paid at his removal by the ſucceeding tenant. Tenants are bound to grind their corn at a particular mill; for which, in ſome caſes, the eighth or tenth part of the corn ſo manufactured, is exacted; but, more generally, only the ſixteenth part, beſides the requiſite ſervices for ſupporting the fabrick of the

ill, and keeping the dams and water courſes efficient. pon the eſtates of the greater proprietors, the tenants are ade amenable to the deciſions of the Baron Bailiie or teward's Court, in queſtions reſpecting the preſervation growing timber, cutting up meadow grounds, mill exac- ons, and winter herding. In general they are debarred by eir leaſes, both from ſubletting and aſſigning their farms; ough the landlord, in particular caſes, often agrees to diſ- enſe with the firſt of theſe clauſes.

SIZE OF FARMS.

The farms accounted here the moſt extenſive, contain om one hundred to one hundred and fifty acres of arable nd. The general run of farms, however, contain only om thirty to fifty arable acres. And poſſeſſions occupied y the poorer people, particularly in the hilly and more remote parts of the country, extend only from five to about fifteen or twenty acres.

Previous to the year 1746, the mode of management was univerſally the ſame over the whole diſtrict: the arable land was uniformly cultivated for corn; the cattle, horſes, and ſheep were maintained on the natural and common paſturage in ſummer, and upon the ſtraw, out of which the corn were threſhed, in winter; and, where the cattle required for conſuming the ſtraw, could not be maintained in this way through the ſummer, they were ſent off to the common paſturages of the hilly country of this diſtrict, and to thoſe of the neighbouring counties of Banff and Aberdeen.

In thoſe days the crops, with a few exceptions, even in the moſt fertile parts of the low country, were ſolely reduced to oats, barley, and rye.

The moſt approved and general mode of management was, to apply the whole manure, to the land intended for the barley crop; which was ſuppoſed to occupy the fourth part of each farm.

farm. In order to procure ſuch a quantity of manure as was neceſſary, the whole labours of the huſbandman were applied through the ſummer, except during the time requiſite for ſecuring a ſufficient ſtock of fuel, in collecting ſand, moſs, or clay, to be mixed with the dung ariſing from the fodder conſumed in winter, and the manure procured by flooring the ſheep cots, from time to time, with turf. And it may be obſerved here, that a ſmall flock was then deemed indiſpenſably neceſſary upon every farm.

From that time the ideas of improvement began to gain ground; at firſt the change was ſlow and unimportant, making little progreſs, until about the year 1768; when the Earl of Fife, in order to promote the improvement of the country, began to grant leaſes, to particular ſubſtantial and intelligent farmers, of lands formerly occupied by four or five tenants. This example was rapidly followed by the other proprietors; and the ſyſtem of agriculture, and the appearance of the low country are now infinitely improved, the ridges being ſtraighted, the fields better drained, and in general properly laid out, by ditches and earthen fences, ſolely at the expence of the tenant; but ſtill ſuſceptible of far greater improvements.

It may be proper to obſerve here, that in Strathſpey, the farms have been for a long tract of time much more extenſive than in the low country, owing to the circumſtance of their having been formerly wadſetted* by the family of Grant; and though the wadſets are redeemed, yet the farms continue to be poſſeſſed by the repreſentatives of the ancient poſſeſſors.

In the preſent ſyſtem of agriculture, there is no fixed or ſteady rotation on any farm in the country; but in all the large farms, ſome proportion is annually fallowed, ſome laid down with turnips, and other green crops, and the whole

* A ſpecies of mortgage, formerly very common in Scotland; by which the actual poſſeſſion of the land was given to the creditor.

graſs, amounting generally to a third or fourth part, conſiſts of ſown clovers, rye-graſs, and rib-graſs.

In the ſmall farms, the only alteration in the ſyſtem hitherto introduced, conſiſts in ſome little proportion in ſown graſs and potatoes. In the low part of the country, the corn crop on a farm of an hundred acres may conſiſt generally of theſe proportions; from ſix to ten acres under wheat, a ſimilar quantity under barley, from twenty-five to thirty-five in oats, and the remainder graſs and green crops as above. The manure, which is principally procured from the farm-yard, is applied to the land to be laid down with wheat, barley, and turnip crops. In Strathſpey, where the ſpirit of improvement now gains ground, the following proportions are obſerved on a farm of ſimilar extent; the half is commonly laid down with oats; about one-third with ſown graſs, and the remainder with beans, peaſe, turnips, and potatoes. Here for the laſt ſeven years, on an average, from two thouſand five hundred to three thouſand bolls of lime have been manufactured, and applied as manure; but for each of the laſt three years of the ſame period, upwards of five thouſand bolls have been applied; which, in every inſtance, has produced plentiful crops of grain and graſs.

Of late years, ſome of the improving farmers have imported lime from Sunderland, and different ports on the Frith of Forth, and ſome has been brought over land, about ſixteen miles, from the county of Banff; which, when applied as manure, has in every inſtance anſwered expectation: but when the immediate expence of this is conſidered, and the diſtance from the ſea ports joined to the ſhortneſs of the leaſes, it is not probable, that this ſpecies of manure will ſoon be generally adopted.

On ſome farms, marl, though frequently an impure quality, has been diſcovered, and where the quality was good, has been applied with ſucceſs; but ſo partially, as hardly yet to merit notice in this report. Along the coaſt of the Moray frith,

the ſea-weed, which is thrown aſhore in conſiderable quantities, is applied to the barley, and turnip fields.

CULTURE OF THE DIFFERENT CROPS.

There being no fixed rotation, it is only neceſſary to ſtate, the modes of culture adopted, for raiſing the different ſpecies of crops.

WHEAT.

This ſpecies of grain, which by the climate of the high country, is reſtricted to the low, was cultivated to rather a greater extent, a few years ago, than it is at preſent; the demand for cattle, having induced the farmers to have more land under graſs, and the checks given to ſmuggling, by preventing the importation of foreign ſpirits, having advanced the price of barley. Fallow, to which dung is always applied, is here regarded as the moſt approved preparation for this crop. The firſt ploughing is given in the courſe of the winter; the ſecond, when the barley-ſeed ſeaſon is done, and two or three more, as the condition of the ground may require; the laſt being given for the ſeed, when the dung is laid on in the month of October, though ſometimes ſo late as the middle of November; three firlots of wheat meaſure are generally ſown on the Scotch acre, which returns about ten bolls. This mode is only varied by ſowing wheat after a horſe hoed crop of beans, or potatoes, to which dung had been previouſly applied; and the returns are nearly the ſame. It may further be obſerved, that the only ſpecies of wheat ſown in the country, is the white kind, and which degenerates, if not frequently changed, by a ſupply from the London market, which has of late been ſuſpended by the effect of the preſent exiſting corn

law, in the framing of which, the neceſſary proviſions for the carriage of ſeed grain coaſtways, has been overlooked.

OATS.

This grain is ſown after wheat, barley, peaſe, and graſs; and the general oat-ſeed ſeaſon, is from the middle of March to near the end of April, according to the ſeaſon; and this takes place, over about a third part of the diſtrict.

Oats are in general ſown after one ploughing, given in winter, or ſpring, and, for the moſt part, at the rate of four barley firlots per acre.

Of the different varieties of this grain, it is only neceſſary to notice two; the common white, and the black-bearded oat; or, more properly, the grey oat. The boll of four firlots of the firſt, in general, yields eight ſtone of meal, Amſterdam weight; of the ſecond it requires ſeven or eight firlots, and ſometimes a good deal more to yield the ſame quantity; and the meal is of an inferior quality; but theſe are now only cultivated in the coldeſt and lateſt parts of the high country; and wherever lime has been applied, as a manure, it has been found advantageous to introduce the white oat in their room.

The average return of this diſtrict may be eſtimated at from four to five bolls an acre.

PEASE AND BEANS

Are ſown at the ſame ſeaſon with the oats; where the beans are ſown alone, they are generally hand-hoed, or horſe-hoed; the quantity of ſeed allotted to the acre is about five firlots, wheat meaſure; the returns exceedingly various, being from two to ten or twelve bolls; the ſpecies of beans cultivated is for the moſt part, the horſe-bean, and this reſtricted to the low part of the country; the early peaſe have been introduced

into the high country; both early and late are cultivated in the low.

POTATOES.

This valuable root was introduced here, ſoon after the famine in 1740. In a few years afterwards, inſtead of occupying only a corner of the garden, it was cultivated in the open field, and is now raiſed in conſiderable quantities upon farms of every deſcription in the country; they are planted in the month of April, ſometimes in drills from three to four feet diſtance, and ſometimes in trenched ground in irregular, and cloſe rows. Dung is ſeldom applied in cultivating this root, and the returns on an average, from an acre, are from twenty-five to thirty bolls of thirty-two ſtone, Amſterdam weight. The red ſpecies, which was at firſt introduced into the country, has long ſince diſappeared, and the white kidney kind is now almoſt univerſally cultivated.

BARLEY.

This grain is in general ſown in May. The land is ploughed three times, and dung always applied, and when it ſucceeds a green crop, one ploughing ſuffices. The quantity of ſeed is about three firlots to the acre; and the return over the diſtrict is about ſix bolls from the acre; but Scotch beans being a more hardy grain, and earlier, are generally ſown in the high country. The return in like circumſtances are ſuppoſed equal to that of barley, but the weight and quality is deemed to be ſomewhat inferior, though there are inſtances of the one yielding as much meal and as much ſpirits as the other. The weight of the boll of barley is in general ſeventeen ſtone, Amſterdam.

TURNIP.

This crop has been long, but partially cultivated over the country. Of late, the quantity begins to increaſe, and ſowing them in drills has been introduced. The land is ploughed three or four times, and they are ſown about the end of June. They are generally conſumed by the young cattle; as the ſale of fat cattle is, upon the whole, trifling, and uncertain.

ARTIFICIAL GRASSES.

Sown graſs was introduced many years ago; but there being a great proportion of land in the high country, on which red clover could not grow, till lime had been applied, it may be ſaid to have come into frequent uſe in the diſtrict only of late years. At preſent, however, there is more hay ſtacked for the market, than perhaps in any other diſtrict of the kingdom; the vicinity alone of great towns excepted. It is generally ſown with barley, though ſometimes with oats; the quantity of ſeed being about twelve or ſixteen pounds of white, and the ſame quantity of red clover, and one and a half or two buſhels of rye-graſs per acre. The quantity of hay, which is mowed about the end of July, rarely exceeds two hundred ſtone the acre.

IMPLEMENTS OF HUSBANDRY.

About thirty years ago, the implements of huſbandry uſed here were of the very worſt conſtruction. The price of the wooden part of the plough did not exceed five or ſix ſhillings, excluſive of the iron, which was charged at the rate only of two ſhillings and ſixpence. The harrow, provided only

only with timber teeth, was valued at half a mark Scotch (under ſeven pence ſterling). The *kellach*, which was a conical baſket, ſupported between ſhafts, ſet on two ill-formed wheels, ſupplied the place of the dung cart. This machine, in the ſtructure of which no iron was employed, was for the moſt part made by the farmer himſelf; but when ſold in the market, coſt altogether abour four ſhillings and ſixpence. Theſe may give an idea of the implements of cultivation then in uſe.

Soon after this period, the plough was improved into the form generally uſed in England, and was known by the appellation of the Engliſh plough. Of late, they are all formed on the principles of thoſe made by Mr. Chrichton, of Edinburgh, and thoſe of the late Mr. Small, at Ford, in the neighbourhood of that city, and coſt from thirty to fifty ſhillings.

The harrow now commonly in uſe, is alſo of the beſt conſtruction, and coſts from eight to ten ſhillings.

The dung cart uſed on the larger farms, and on which the iron axle begins to obtain, is, excepting in few inſtances, drawn by two horſes, and coſts, when complete, from ſix to ſeven pounds.

Fanners and rollers, and the other implements of huſbandry, uſed in the ſouthern part of the kingdom, have alſo been, though partially, introduced here.

Threſhing machines have been lately erected in the low part of the country; the number at preſent is eight.

It is worthy of remark, that Mr. Thomas Duncan, a tenant of the earl of Moray's, on his lordſhip's eſtate in Alves, was the firſt who introduced fanners into the country; and Mr. George Duncan, his ſon, the firſt who built a threſhing machine, and uſed the caſt iron mould board on the plough.

FARM HOUSES AND OFFICES.

Previous to the year 1768, there was no farm houſe or offices covered with ſlate in this diſtrict; nor were timber floors common. At preſent, however, in this reſpect, the accommodation is not inferior to that on any farms of the ſame extent in the ſouth of Scotland. The buildings being of ſubſtantial maſon work of ſtone and lime, the dwelling houſe of two ſtories, neatly and completely finiſhed within; the offices ſuitable to the extent of the farm, properly ſituated, and either ſlated, or thatched with ſtraw.

It ſhould be obſerved here, that Mr. William Donaldſon, a tenant of Lord Fife's, at Moneton near Elgin, was the firſt who built a regular ſet of farm offices in this diſtrict, beſides putting the farms into regular order, and encloſing them with turf fences.

The dwellings of the poorer tenants, mechanicks, and labourers, in the low part of Moray, are ſomewhat improved in the walls, windows, and thatch; but being built in general at the tenant's expence, or the allowance from the landlord altogether inadequate, they ſtill remain a deformity in the appearance of the country.

In the hilly part of the country, between the lowlands of Moray and Strathſpey, particularly in the pariſhes of Dollas, Knockandow, and Edinkeillie, the habitations of the tenants are in general very poor and mean; the ſide walls being built of turf, and the roof covered with the ſame materials.

LABOURERS, AND THE PRICE OF LABOUR.

There being no manufactures of any conſideration in this diſtrict, the great body of the people are conſequently employed in huſbandry; yet the price of labour has, in the courſe of the laſt fifteen years, riſen to nearly double what it

was

was before that period; and this may be accounted for, in a great meaſure, by the emigration of numbers of both ſexes, in that claſs, to the manufacturing parts of the kingdom.

The wages of a common ploughman are from ſix to ſeven pounds ſterling. Thoſe of a female ſervant, from two pounds to two pounds ten ſhillings by the year, excluſive of their maintenance, which is in general provided for them in the family; or ſix bolls of oat meal, at nine ſtone per boll, Amſterdam weight, when not maintained in the family. A man hired for the harveſt, which in general laſts from four to five weeks, and in which ſpace, the whole crop is ſtacked and thatched in the yard, receives about one pound four ſhillings; and a woman, upon the ſame account, about ſixteen ſhillings, with their victuals. A labourer, hired by the day, in ſummer receives ten pence, without victuals; and from ſix pence to eight pence in winter.

There is ſo little farm work done by the piece, that it is not requiſite to take any notice of it in this report, further than that hay is ſometimes mowed at from two ſhillings to two ſhillings and ſixpence the Scotch acre; and that turf fences, four feet high, are built at from nine pence to one ſhilling for ſix Scotch ells.

In ſummer, the labour commences at ſix o'clock in the morning, and ends at the ſame hour in the evening; and in winter, at ſun riſing and ſun ſetting. The horſes, in ſummer, are worked in the plough or cart for about three hours in the morning, and for the ſame ſpace in the afternoon; and, in the ſhort days in winter, for about four hours in the day.

The price of butcher's meat and fiſh, has of late been much advanced. Beef and mutton, which, twenty years ago, could have been purchaſed at a penny, or three halfpence a pound, now ſells for three pence and four pence. A dozen of haddocks, which, at that period, would not have ſold for more than two pence, cannot now be bought for leſs than from a ſhilling to fourteen pence. The prices of poultry

and eggs are raiſed in proportion; and the value of grain, for the laſt ſeven years, will appear from the annexed ſtate of the fiars of the county.

It has already been obſerved, that the farm ſervants are in general maintained in the family. The ordinary breakfaſt being pottage made of oatmeal, which is ate warm, with milk, or ſmall beer; for dinner, a kind of flummery, called *ſowens*, made from the bran of oatmeal, ate generally with milk; and for ſupper, greens or cabbage, either cut ſmall or maſhed, and afterwards boiled with an addition of oatmeal and ſalt; and at each meal there is an addition of bread, made from a mixture of oats, bear, and peaſe meal. On Sundays, and other holidays, the dinner is broth, made of pot barley, with greens or roots, and butcher's meat.

ROADS AND BRIDGES.

There is but little alteration in the ſtate of the roads, either publick or parochial, over the county, for many years by-paſt; and, excepting in a few inſtances, the proprietors beſtow very little attention on this branch of police. The little which is done, is under the ſtatute 1669, by which the labour of the tenants, mechanicks, and other inhabitants, is required for ſix days in the year, or compenſation for the deficiencies in money. The poſt road between the rivers Spey and Findhorn, though carried through a tract of the drieſt ground in the county, is yet, from want of attention, covered with many large pools of water, particularly eaſtward of the town of Forres. This evil, with a little ſkill, and a very trifling ſum of money, might be completely removed. The roads leading from the different quarters of the interior part of the country, to the harbour of Loſſiemouth, where a great quantity of grain is annually ſhipped, are, if poſſible, in a ſtill worſe condition, and ſeem in a peculiar manner to demand the attention of the proprietors, and of thoſe who are entruſted

with the management of their eſtates, as there is no doubt, but that, even under this ſtatute, in ſuch a cloſely inhabited and well peopled country, if the labour was regularly exacted and judiciouſly applied, the roads might in a few years be much improved, which would render the acceſs from one part of the country to the other eaſy and commodious.

In Strathſpey, where more difficulty muſt of neceſſity have occurred in forming the roads, the accommodation in this particular is much ſuperior to that of the low country, there being a good road from one end of the diſtrict to the other, on both ſides of the river Spey; and which now, by facilitating the carriage of lime from the different quarries lately opened in that quarter, muſt tend greatly to the ſpeedy improvement of that part of the country. Upon the poſt road, there is no cauſe to complain of the want of bridges, except acroſs the Spey and Findhorn. On every intervening brook and rivulet there is a ſtone arch; and over the river of Loſſie, near Elgin, there has long been a handſome, ſubſtantial bridge of one arch; which was lately rebuilt at the expence of the landholders of the county. The great deficiency, therefore, in this reſpect, is at the Spey and Findhorn, than which there are no rivers in the kingdom which run with more rapidity; and on this account, when ſwelled by floods, the progreſs of the traveller is often interrupted for days, and on ſome occaſions lives are loſt. The year 1782 is remembered with grief, when thirteen perſons in paſſing the Findhorn were drowned.

It has been often propoſed to build a bridge acroſs this river, at the poſt road; and ſome years ago, the Earl of Moray employed Mr. Stevens the architect to ſurvey the ground, in order to aſcertain the moſt eligible ſituation. This gentleman made choice of a place a little above the preſent line of the poſt road, where the river paſſes in a narrow channel between rocks; and he was of opinion, that a bridge might be erected on this ſpot, at an expence of about three thouſand one hundred pounds ſterling.

The advantages of a bridge, in an agricultural view, by opening the communication to this country, from the extenſive diſtrict to the weſtward, are ſo obvious as not to require a particular enumeration here. Something farther, however, in this reſpect occurs in the report for the county of Nairn, to which reference is made.

Of late alſo, an effort was made, to raiſe a fund for building a bridge on the Spey, at the boat of Fochabers; and, in proof of the general opinion of the country, reſpecting the utility of a bridge in this quarter, a ſubſcription of no leſs than three thouſand pounds was very ſoon filled up. Mr. Stevens was alſo employed by his Grace the Duke of Gordon to form a plan and eſtimate; which, however, having exceeded the amount of the ſubſcription by eleven or twelve thouſand pounds, the attempt has been ſuſpended, until the aid of government can be obtained; without which there is no probability that this object, however deſirable, can ever be accompliſhed.

An eligible ſituation for a bridge, has been found out at the boat of Brigg, about ſix miles up the river from Fochabers, and where, as appears from an ancient charter dated in 1232, there was a timber bridge, part of the eaſtern pier of which ſtill remains. An undertaker, of great credit in his line, having ſurveyed the ground, has given it as his opinion, that a ſubſtantial ſtone bridge might be erected there, at an expence not exceeding three thouſand pounds.

This ſituation, in an agricultural view, would be highly advantageous, being in the middle of the country, between the bridge of Grantown and the mouth of the river. It would therefore accommodate a greater number of people. The limeſtone quarries of Banffſhire alſo lie nearer to this part of the river than to the boat of Fochabers; and the great cattle fairs of the north of Scotland, are held likewiſe in its vicinity. The cattle dealers from the ſouth, who are at preſent debarred from attending theſe fairs, by the extreme difficulty of getting black cattle acroſs this rapid and unfordable river,

would of courſe extend their dealings into this diſtrict; which circumſtance, of itſelf, would contribute to make the cattle ſell at a higher rate than can be expected, after being jaded by a long march of twenty or thirty miles, with little or no provender.

Were a bridge to be built on the above mentioned ſituation, it would be neceſſary to form a new line of road from Portſoy to Elgin; which would not only be of great advantage to this diſtrict, by affording an eaſy means of tranſporting cattle to the ſouthward, but alſo open a communication through a great extent of corn country, in Banffſhire, as will be more particularly noticed in the report from that county.

It is alſo obvious, that if this road and bridge were completed, the farmers, who reſide on the north ſide of the Spey, would have it in their power to procure lime on very eaſy terms, from the lime quarries of Banff ſhire; which alone ſhould induce the proprietors in that part of the country, to exert themſelves in effecting an object, which, in every point of view, would tend ſo much to the improvement of their eſtates, and of the country at large.

MARKETS AND FAIRS.

There are weekly markets, held on Fridays, in the two royal burghs of Elgin and Forres, in which, meal, butcher's meat, poultry, and ſuch like, are ſold; and to which, alſo, turf and peat are brought, for the uſe of the inhabitants, by ſuch of the poorer people, as have ſettled on the ſkirts of the moſſes and moors, at the diſtance of eight or ten miles from theſe towns. The turf and peat are carried on ſmall carts, formed of bars inſtead of deals, and drawn by ſingle horſes. Each load ſells for eleven pence, or a ſhilling.

There are ſix fairs, for the ſale of cattle, horſes, and merchant's goods, held yearly in each of theſe towns; and, at ſome of the villages in the country, there are alſo ſimilar fairs, but of leſs note.

The

The inconveniency already ſtated, of getting black cattle acroſs the Spey and Findhorn, renders all theſe fairs of little importance to the country. It will, from this account, occur, that there is no market eſtabliſhed for corn, although, by the cuſtom-houſe books of the diſtrict, it appears, that of late years, from ten to twelve thouſand bolls of wheat, barley, and oats, have been annually exported to the Frith of Forth, and the London market. This quantity is purchaſed by three or four individuals; generally by commiſſions from correſpondents in the ſouth.

LIVE STOCK.

Black Cattle.—It will be underſtood, that, from the mode in which black cattle were treated in the low country, before the improving ſyſtem commenced, that the breed muſt have been of a poor and contemptible quality. When the attention of the people was turned to this object, the neceſſity of endeavouring to improve the breed was perceived; but, inſtead of taking meaſures for raiſing the bone and figure of the country cattle, they introduced, though with little judgment, the Dutch and Lancaſhire breeds; which, being croſſed with each other, and with the country cattle, produced a mixed and clumſy breed. This was in a ſhort time diſcovered; and, ſince then, attention is only paid to rearing the true Scotch breed: and bulls have been purchaſed from the Iſle of Skye, and the weſtern coaſt; by which means, the ſtock beſt adapted to the ſoil and climate, is daily increaſing and improving. In Strathſpey, and the high country, the breed remained unmixed, and preſerved their handſome form; but, from the ſcantineſs and coarſeneſs of paſture, their ſize was comparatively ſmall. Since the introduction of ſown graſs and turnips, they are conſiderably raiſed in bone; but, by proper treatment and care, they might be ſtill farther improved in weight and value.

A great

A great number, from all parts of the diſtrict, are yearly diſpoſed of in England, and the ſouth of Scotland.

HORSES.

During the period, when the whole arable land was continually under corn crop, it was thought requiſite to have eight or ten oxen yoked in the plough, and the horſes were then only regarded in a ſecondary view; they being chiefly employed to harrow in the ſeed, carry home the fuel from the moſs, and ſand, moſs, or clay, to the dunghills.

When the extent of farms was enlarged, and a portion laid out in ſown graſs, the oxen were diſcharged from the plough; which was thereupon managed by four horſes, and, in a ſhort time thereafter, only by two; in conſequence of which, the breed in the low country has been greatly improved, both in ſize and ſhape; and a pair of ſuch horſes will now bring about thirty pounds ſterling.

In the hilly part of the diſtrict, where farms are ſmall, and where cattle are generally uſed in the plough, the breed of horſes is very poor and diminutive, and ſell at about four or five pounds each.

SHEEP.

There are but a few of this ſpecies of ſtock in the low country; though, in the hilly part of the country, where the poorer tenants reſide, an inconſiderable number of the ſmall white-faced breed is ſtill to be ſeen. In Strathſpey, there are a conſiderable number of the black-faced breed; but, as both theſe ſpecies will be deſcribed in the reports of the agriculture of thoſe counties, where ſheep are conſidered an object of greater importance, it ſeems unneceſſary to extend this article here.

WOODS.

WOODS AND PLANTATIONS.

From the diverſity of ground, as already noticed, in the low parts of this diſtrict, perhaps no country, of ſo wide an extent in Scotland, afforded ſo much the means of embelliſhment by ornamental plantations. The Earl of Fife, upon his acceſſion to his eſtates in this county, diſplayed the ſuperiority of his taſte, in ſelecting and planting ſuch uncultivated riſing grounds, as he judged would contribute moſt to this effect. The Earl of Findlater, and the other proprietors, ſoon followed his lordſhip's example; and, to ſo great an extent is this mode of improvement now carried on, that, it is probable, the whole of the grounds inacceſſible to the plough, in the low lands of Moray, will ſoon be covered with all the different ſpecies of foreſt trees, propagated in the kingdom.

NATURAL WOODS.

In the low country, there is little of this kind of wood, except one conſiderable tract of copſe wood oak, upon an eſtate of the Earl of Fife's, near Elgin, which is at preſent in a thriving ſtate, being well fenced, and properly cared for.

In Strathſpey, there are very extenſive foreſts of Scotch fir, on the eſtates of Rothemurchus, the Duke of Gordon, and Sir James Grant. The firſt attempt to convert theſe foreſts into any commercial purpoſe, was made by the York Buildings Company, about the year 1724, who erected an iron foundery at Coutnacoil, a part of Sir James Grant's eſtate, in the pariſh of Abernethy; which, however, was only ſupported for a ſhort time. Aaron Hill, the poet, was employed as the clerk to the eſtabliſhment; who firſt taught the inhabitants of the country to bind the timber into rafts, compoſed

poſed of fifty or ſixty ſpars, on which, alſo, a quantity of deals and other timber are laid, and the whole navigated by two men down the river to Garmouth; from whence the men returned on foot, carrying on their ſhoulders, the ropes and iron hooks requiſite for keeping the rafts together.

In this ſtate matters remained, (merely accommodating the domeſtic purpoſes of the country) till about the year 1784; when a Company of Merchants from Yorkſhire, contracted with the Duke of Gordon for all the marketable timber in the foreſt of Glenmore, to be felled within the ſpace of twenty-ſix years, at the ſum of ten thouſand pounds. This foreſt afforded maſts for veſſels of great burden, and even for the royal navy.

It perhaps would have been impracticable to carry them into the river, but for an expedient of ſome ingenuity, which has been deviſed, and made effectual at a conſiderable expence. The talleſt and moſt valuable trees ſtood on the borders of a lake, in the foreſt, diſtant from the river more than four miles, into which it diſcharged itſelf by a ſmall brook, to which the heavy timber was floated on the lake, where a dam and ſluices are conſtructed, to form, at pleaſure, an artificial flood; by which means the timber was conducted into the river, along the courſe of the brook, which had been ſtraighted and deepened for the purpoſe.

When the timber, from this and the other foreſts in Strathſpey, arrives at Garmouth, after ſupplying a great extent of country, it has of late been exported, in conſiderable quantities, to other markets, both in Scotland and England.

This company have alſo formed a dock-yard, and built ſeveral veſſels, ſome of them of four and five hundred tons burden, entirely of this timber.

It is well worthy of remark, that, before the commiſſioners of the navy purchaſed any of this wood, they tried ſeveral experiments, in order to aſcertain the quality; and it was at laſt found equal, if not ſuperior, to any ever imported from the Baltic.

The

The foreſts of natural Scotch fir, in this part of the diſtrict, may contain nearly twenty thouſand acres.

MISCELLANEOUS OBSERVATIONS AND HINTS FOR IMPROVEMENT.

It has been obſerved, that there are many plantations of thriving trees, in the low country of Moray, yet theſe being all on barren moors, and riſing grounds, it is certain that the fields are ſtill naked and expoſed, on which account, the crop as well as the cattle are greatly injured. The diſtance in general from the quarries, muſt deter from erecting fences of ſtone, though on the eſtates of Monachy, Aſliſk, and Burgy, there is a great deal of ground here called *baulks*, or *mearings*, interſperſed among the arable fields, the ſtone on which would encloſe the whole lands around them, and give a great addition of arable field.

Many farmers, ſome years ago, attempted to encloſe with with turf, but experience has demonſtrated the inſufficiency of this kind of fence, and after outlays, to them conſiderable, theſe are now in general abandoned.

Although a leaſe of nineteen years, is conſidered as a proper term, both for landlord and tenant, in a country, thoroughly improved, yet it can never be expected, that a tenant will attempt to raiſe hedges (the only mode by which the country can be encloſed) upon a leaſe of ſuch duration. The plan therefore which appears moſt likely to be effectual, is, that the proprietors ſhould be at the firſt expence of planting hedges, which ſhould be afterwards attended to by perſons retained for the purpoſe, in number proportioned to the extent of each eſtate, and who ſhould be maintained at the joint expence of landlord and tenant, and there being now abundance of wood in the country, for the rails, the expence to either party muſt be inconſiderable. Perhaps the importance of this improvement is not generally attended to, for

it may be here obſerved that experience has fully proved, how impracticable it is to raiſe black cattle or horſes in open fields, to within twenty or thirty per cent. of the value, which they attain when reared in proper incloſures. In the high country, particularly in Strathſpey, where there is plenty of ſtone, and where the valleys are better ſheltered, ſtone fences would anſwer all the ends, and are therefore preferable, becauſe they can be at once completed. The incloſing of this country might alſo be effected, were the landlord to quarry the ſtones, and build the walls at his expence, and the tenant to carry the materials, and pay intereſt for the money advanced by the landlord. The wall ſhould be afterwards upheld at their mutual expence, the landlord reſerving alſo the right of ordering repairs, when he ſhould ſee cauſe.

In that part of the diſtrict, between Strathſpey and the low country, the land is poſſeſſed by the poorer tenants, in ſmall lots of from five to twenty arable acres, with a liberty of common paſturage, over extenſive tracts of moor and paſture grounds. A great many of theſe people make ſhift to maintain their families, and pay their rents, by preparing and carrying peat and turf to the towns of Elgin and Forres.

The duty having been lately taken off coals carried coaſtways to the north of Scotland, muſt materially effect this claſs of people, as there is no doubt but coal will in a few years be very generally uſed in that country, eſpecially along the coaſt.

In order to ſecure employment to the inhabitants; and at the ſame time to improve this part of the country, it is humbly ſuggeſted, that villages ſhould be built in proper ſituations along the banks of the rivers, and in the vicinity of Moſs. Were this done, and ſome ſpecies of manufacture introduced, the people would live more comfortably, and the arable land might be encloſed and ſubdivided, and let in larger farms. Until ſomething of this ſort is done, there is little chance, that any material improvement, in this part of the country, will ever take place.

It has been obſerved, that for ſome years paſt, a conſiderable quantity of lime, has been manufactured, and uſed as manure in Strathſpey. There is no country better ſupplied with lime quarries, and all that appears neceſſary to be done there, in order to introduce the general uſe of this valuable manure, is, that the proprietor ſhould at his own expence erect proper kilns, and employ people experienced in burning lime-ſtone: by this means the tenant might be ſupplied with any quantity they might have occaſion for, at a more moderate expence, than they can manufacture it themſelves, and without any trouble beyond that of carrying it from the kiln to the farms.

ROTATION OF CROPS.

Although the ſoil was formerly mentioned as being of three kinds, yet in conſidering this particular, it is only neceſſary to keep in view, the clay and the ſandy ſoils, becauſe the loam, participating of each, may be treated in the ſame manner as that to which it is moſt allied. On the clay ſoils, perhaps it would be moſt proper, that each farm ſhould be divided into ſix parts, to be thus managed; firſt year, fallow, ſecond year, wheat, third year, peaſe, or other green crop, fourth, barley ſown with twenty or twenty-five pounds of red clover, and a buſhel of rye-graſs, and ſixth, oats, ſo as that one-ſixth part ſhall be regularly in fallow;

One-ſixth in wheat;
One-ſixth in peaſe;
One-ſixth in barley, laid down with graſs ſeeds as above;
One-ſixth in graſs; and
One-ſixth in oats;

On the ſandy or light lands, the following rotation might be adopted, the firſt year turnip or other green crop, to which manure is applied; ſecond, barley ſown down with graſs ſeeds; third, fourth, and fifth years graſs; ſixth, oats;

and ſeventh, barley without dung; ſo that three-ſeventh parts of the farm ſhould be regularly in ſown graſs, two-ſevenths under barley, one-ſeventh under oats, and the other ſeventh part under turnip and other green crop.

DRAINS.

There is a conſiderable degree of attention paid, both by landlords and tenants, to the draining of land. Except in very particular caſes, the water is carried off in open drains, in the formation of which, however, there is one general error, namely, making the bottom too wide, and the banks too perpendicular.

In the low country, the draining of the loch of Spynie has been long conſidered as an object of great importance. Some years ago Alexander Brander of Kinnedar, Eſquire, of Thames Street, London, in concert with the late James Brander, Eſquire, of Pilgaveny, his brother, laid out coſiderable ſums towards effectuating this object. But proceeding without experience, and without conſulting any ſkilful engineer, the courſe of the canal, reſtricted to the line of the ancient outlet, did not anſwer the purpoſe completely, it being ſubjected to occaſional obſtructions from the overflowing of the river Loſſie, along the banks of which, it was conducted, the whole length of its courſe. When the canal, which they propoſed, was nearly completed, they were interdicted by Sir William Gordon of Gordonſtone, Baronet, who claimed the property of the loch. In conſequence of the law-ſuit which followed, the court of ſeſſion appointed a land ſurveyor to make a map of the lake and adjoining grounds, aſcertaining the depth in various places, and other particulars, from which it was found it would be more practicable to drain the loch by a canal to the bay of Stotfield, paſſing by the manſe of Drainy, wholly unconnected with Loſſie, and altogether upon Meſſrs. Brander's own property. This map further in-

ſtructs,

ſtructs, that there is a ſufficient fall from the deepeſt part of the lake, to the low water mark at the bay of Stotfield.

Were this effectuated, not only two thouſand acres of fertile land would be ſubjected to the plough, but an inland navigation might be obtained to within two miles of Elgin, at preſent ſix miles diſtant from the ſea, through a tract ſo much upon a level, that a ſea-lock only would be required.

The advantages of bringing lime and coal by water into the centre of the country, and the ſuperior facility of ſhipping grain there, are ſo obvious as to need no illuſtration.

It is therefore to be hoped, that the proprietors of theſe eſtates (who have already expended very conſiderable ſums in making improvements) will turn their attention to this very important object, the completion of which, would no doubt promote their own intereſt, as well as the general good of the country.

OBSTACLES TO IMPROVEMENT.

Among the firſt of theſe may be reckoned the expence, to which an improving farmer is ſubjected, in erecting or acquiring the requiſite accommodation of houſe and offices; which on a farm of eighty or an hundred acres, generally amounts to, from two to three hundred pounds ſterling; which as appears above, he muſt advance, and, which added to the term of paying the money rent, ſo long before the corn can be brought to market, generally deranges, or encroaches ſo far upon his funds, as to depreſs his ſpirit for improvement; and conſequently in all countries, where improvements have been ſucceſsfully carried on, the proprietors have built the houſes at their own expence, and put off the payment of the rent for ſix or eight months after harveſt. In this country, the poorer tenants are obliged to ſell their corn at an under value, for the payment of their rent, ſo that the value of grain is always very low about the term of Martinmas, and the grain

grain then ſold is diſtinguiſhed by the epithet of "the poor man's boll." The aſtriction to mills has long been accounted a diſcouragement to ſpirited agriculture; and in this country aſtriction is conſidered as a great grievance; and having been taken off in every diſtrict, in an advanced ſtate of cultivation, it is obvious that this complaint might alſo, by a proper concert, be eaſily removed in this.

From the whole, it is certain, that a ſpirit of improvement, has been pretty generally introduced, among the farmers of this country.

Were the proprietors to attend to the removal of theſe, and other leſſer diſcouragements; and were the tenants encouraged to more exertion, either by means of a greater length of leaſe, or by a conventional indemnification, if removed, before the advantages of any ſpirited expenditure could be recovered; it is certain, that the intereſt of both parties would be advanced; the value of land, and of ſtock, very conſiderably raiſed; and the whole country would ſoon become a ſcene of rural induſtry, peculiarly diſtinguiſhed for agricultural ſkill, cultivation, and improvement.

State of the Fiars (or Average Price of Grain) of the County of ELGIN and FORRES, from the Year 1786 to the Year 1792, both inclusive.

Respective Years.	When settled.		Wheat.			Barley, or Bear.			Oats, Five Firlots to the Boll.			Oat Meal, Eight Stone to the Boll.		
			£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1786	22d Feb. 1787	.....	0	18	0	0	15	6	0	15	0	0	13	4
1787	Ditto 1788	.....	1	0	0	0	16	0	0	15	0	0	13	9¼
1788	23d Feb. 1789	.....	1	1	0	0	12	0	0	12	0	0	10	0
1789	22d Feb. 1790	.....	1	2	6	0	13	0	0	12	6	0	11	2
1790	Ditto 1791	.....	1	2	0	0	14	0	0	14	0	0	12	6
1791	Ditto 1792	.....	0	18	6	0	17	0	0	16	0	0	14	$2\frac{3}{12}$
1792	Ditto 1793	.....	1	0	0	0	16	0	0	14	6	0	12	$5\frac{6}{12}$

State of the Fiars (or Average Price of Grain) of the County of ELGIN and FORRES, from the Year 1786 to the Year 1792, both inclusive.

Reſpective Years.	When ſettled.		Wheat.			Barley, or Bear.			Oats, Five Firlots to the Boll.			Oat Meal, Eight Stone to the Boll.		
			£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1786	22d Feb. 1787	.....	0	18	0	0	15	6	0	15	0	0	13	4
1787	Ditto 1788	.....	1	0	0	0	16	0	0	15	0	0	13	9¼
1788	23d Feb. 1789	.....	1	1	0	0	12	0	0	12	0	0	10	0
1789	22d Feb. 1790	.....	1	2	6	0	13	0	0	12	6	0	11	2
1790	Ditto 1791	.....	1	2	0	0	14	0	0	14	0	0	12	6
1791	Ditto 1792	.....	0	18	6	0	17	0	0	16	0	0	14	2 5/12
[illegible]	[illegible]	.....	1	0	0	0	16	0	0	14	6	0	12	5 4/12

APPENDIX.

THE Lake, or *Loch* of Cottes, is ſeparated from that of Spynie, by a narrow ſtrip of ground, through which the river Loſſy bends its courſe, in a channel ſomewhat above the level of the ſurface of either lake. It lays on the ſame level with the loch of Spynie, and on a bottom of the ſame quality; and therefore the advantages of draining off the water, are equal in proportion to its extent, and the expence, it being nearer to the ſea, muſt be in a great degree leſs.

There are two ſmall brooks which run into this lake, each of them of ſuch conſideration, as to turn the machinery of a common corn mill. The moſt effectual mode of draining this lake, appears to be, by turning off the Burn of Lhanbryde, along the weſt ſides of the farms of Darkland and Shearestown, into the river Loſſy by the brook, which drains the moſſes of Barmukity and Coxton; and by turning back the other ſtream into the river Spey, along the courſe which was deſcribed and reſerved by the Earl of Fife, when he exchanged his lands of Garmouth for the lordſhip of Urquhart. In this courſe, there is fall ſufficient for erecting two mills, in place of thoſe now on his lordſhip's eſtate of Innes; and ſituations might be found, equally commodious for thoſe concerned. On the other ſtream there is alſo fall for a mill, if one was required, near the ſouth corner of the farm of Darkland; ſo that no inconvenience would ariſe to the Earl of Fife's eſtates in thoſe parts.

The mill of Leuchars would indeed by this means be ſuppreſſed; but, as the proprietor has another mill in the neighbourhood (at St. Andrew's), it would require but a trifling expence to accommodate the whole eſtate there, while the

advantages, that would be gained to the whole land of Leuchars, are ſo obvious, as to render it unneceſſary to mention them here. If both theſe ſtreams were thus diſpoſed of, it would only remain to open a communication between the lake and the ſea, by turning off the preſent canal above its influx into Loſſy, through the farm of Inchbroom.

It may be neceſſary further to add, that if a canal were properly formed in this direction, from the level of the low water mark, the lake of Cottes would be greatly diminiſhed; and the adjoining plains thereby much improved, even although theſe ſtreams were continued in their preſent courſes. At the ſame time, it is evident, that no great inconvenience could ariſe from the alteration, the expence of which would be comparatively inconſiderable, and would in all probability be entirely reimburſed in the firſt year after its operation had the full effect.

In addition to what is already ſtated, reſpecting the plantations in the low lands of Moray, it may be proper to add, for the information of proprietors at large, that in the year 1772, the Earl of Findlater planted a ſmall hill, called the Birkin-hill, near Elgin, containing ſixty-ſix acres; and that from the weedings of the common fir, which were taken out to make room for more valuable trees, there have been drawn for the laſt four years, above 40l. yearly, beſides the expence of cutting. And, if the whole were now ſold off, this plantation, would yield at the rate of thirty ſhillings the acre, for the land ſince it was firſt planted.

This hill was originally a dry black moor, covered with a ſtinted kind of heath, and in fact, did not yield a penny the acre to the proprietor; ſo that this valuable improvement was effected, without any diminution of the rent roll.

It is worthy of remark here, that the Earl of Fife has lately adopted a plan of ornamenting the country, which, it is hoped, will be followed by the other proprietors. On his lord-

lordſhip's eſtates, along the ſides of the publick roads, he has planted belts, or ſtripes on each ſide, in which are to be ſeen all the variety of trees and ſhrubs known in the kingdom.

It has already been obſerved, that notwithſtanding the great number of plantations in the low part of the diſtrict, yet the arable land remains ſtill in a great meaſure naked and expoſed, and that the crops, as well as the cattle, are injured thereby. Were his lordſhip's example to be generally followed by the other proprietors, it would not only tend to the ornament of the country, but alſo to its real improvement.

FINIS.

GENERAL VIEW

OF THE

GRICULTURE

IN THE COUNTY OF

ARGYLL,

AND

WESTERN PART OF

INVERNESS-SHIRE.

6

GENERAL VIEW

OF THE

AGRICULTURE

IN THE COUNTY OF

ARGYLL,

AND

Western Part of INVERNESS-SHIRE.

OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

BY

JAMES ROBSON.

Gt. Brit

DRAWN UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULTURE AND INTERNAL IMPROVEMENT.

LONDON:

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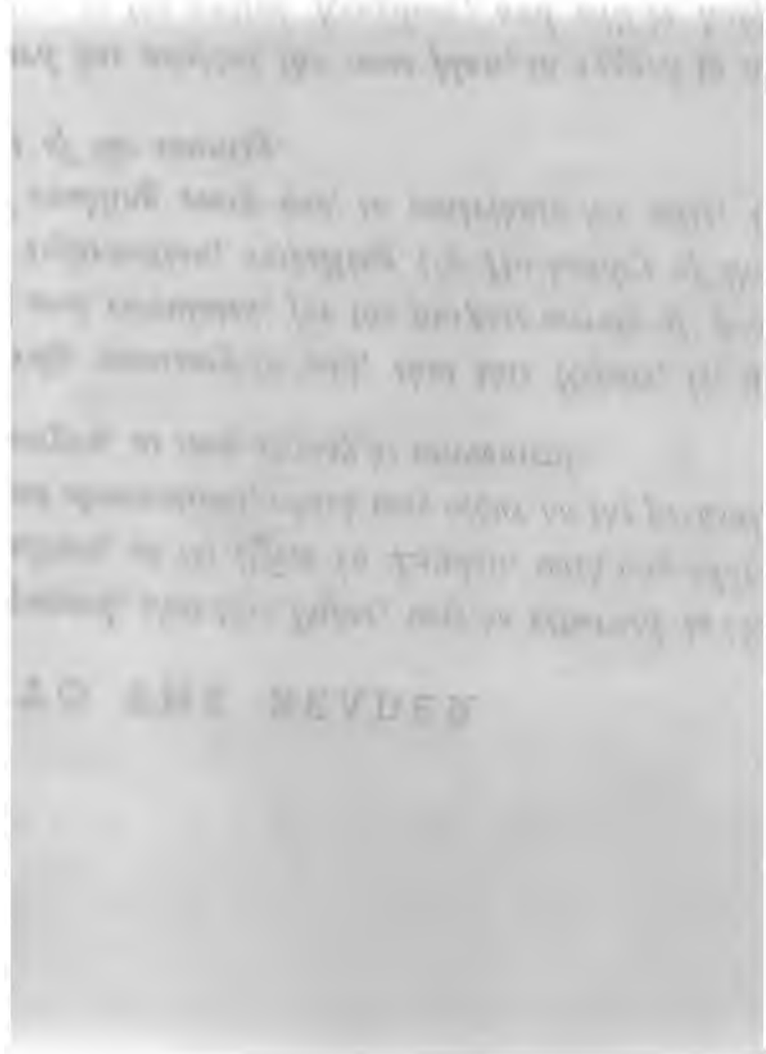
TO THE READER.

IT is requested, that this Paper, may be returne
Board of Agriculture, at its Office in London, with a
tional remarks and observations, which may occur on the
written in the margin, as soon as may be convenient.

It is hardly necessary to add, that this Repor
present, printed and circulated, for the purpose merely
curing farther information, respecting the Husbandry
district, and of enabling every one, to contribute his
the improvement of the country.

The Board has adopted the same plan, in regar
the other Counties in the united Kingdom; and will b
to give every assistance in its power, to any person, w
be desirous of improving his breed of Cattle, Sheep, &
trying any useful experiments in husbandry.

LONDON, FEBRUARY, 1794.



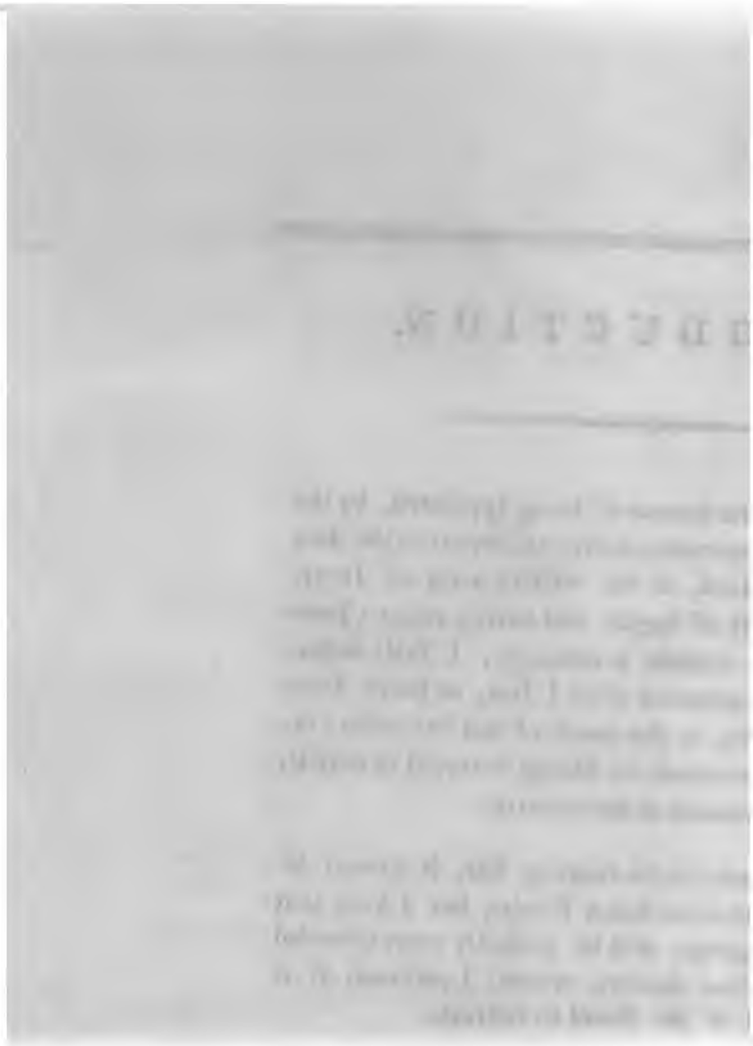
INTRODUCTION.

HAVING had the honour of being appointed, by the Board of Agriculture, to make a ſurvey and report on the ſtate of the huſbandry and ſtock, of the weſtern parts of Inverneſsſhire and the county of Argyll, and having made a journey throughout theſe diſtricts accordingly, I ſhall endeavour to give a faithful narrative of all I ſaw, or heard from any reſpectable authority, in the courſe of that excurſion; together with ſuch obſervations, as having occurred to myſelf, tending to the improvement of the country.

Having been bred only in the farming line, it cannot be expected, that I ſhould write like a ſcholar, but I hope that my narrative and language, will be perfectly comprehended and underſtood by actual farmers, whom, I preſume, it is principally the object of the Board to inſtruct.

When I venture to propoſe any thing new, it is only from a deſire of being uſeful to my countrymen, not that I think myſelf intitled to adviſe, and far leſs to direct them.

If I have not dwelt upon the exertions of proprietors in the line of improvement, I hope I ſhall not be ſuſpected of having overlooked them, or deſirous of withholding the praiſe ſo juſtly their due.—But as I underſtood the object of my miſſion to have been, the procuring information for, and the holding out examples to, the actual farmer, I did not wiſh to propoſe ſuch, as were very violently different, from their preſent practices, or ſuch as muſt evidently be attended with more



more expence than they could afford. I hope I have accurately ſtated, the information given me by thoſe, who were pleaſed to beſtow it. I am certain at leaſt, that it was not my intention, either to miſrepreſent or overſtrain it.

JOURNAL.

I SET out from Crieff the 14th of October, 1793, by Tyndrom and Blackmount, to Fortwilliam, the way pointed out to me, being to enter on the ſurvey, at the weſtern part of Inverneſs and Argyleſhire.

The lands from Tyndrom to Fortwilliam are chiefly in grazings. The ſtocks in this hilly diſtrict are principally ſheep, the cows being merely for family uſe, and the horſes for ploughing the little that is kept in tillage, a few goats are indeed kept upon the moſt rocky mountains, from a miſtaken notion that they can paſture, where ſheep cannot find footing. In ſome places alſo, a few Highland breeding mares are kept. The ſheep, which are here the principal ſtock, are of the Linton black faced breed, except with ſmall tenants, who have yet, a ſhare at leaſt, of the old Highland white faced breed in their flocks. The Linton breed, was introduced into this country, about twenty-five years ago, and the graziers ſeem partial to them. They think them hardy and remarkable for keeping the tops of the mountains, and ſhifting for their food in a ſtorm or fall of ſnow. Their lambs alſo when dropped, are rough, and well covered with wool.

At Michaelmas, or the 10th of October, they begin to ſmear their flocks with butter and tar, the lambs are all ſmeared

ſmeared or laid, and on many grazings the whole flock; on others only the lambs and gimmers. The mixture uſed for this purpoſe, is, in general, two pounds Engliſh weight of butter, one Scotch pint of tar, which is applied to five ſheep.

The graziers here are very attentive to the confining of their rams, which are ſeparated from the ewes, about the 10th of October, and let to the ewes, from the 12th, to the 24th of November; they alſo pay great attention to the keeping and procuring of good rams, but this almoſt entirely, with a view to raiſe the bone of their ſheep, their wool not being conſidered an object that merits much attention.

Few of the new dropt lambs die, provided that the ſeaſon admits of a ſufficiency of graſs growing, to enable the ewes to afford them plenty of milk, proper attention being always paid to the pulling off the wool from the udders of the ewes, in order to expoſe the teat fairly to the lamb; for which purpoſe, the ewes ought to be gathered, about fourteen days before lambing time. When ignorant graziers put their rams too early to the ewes, the lambs are dropt before the graſs begins to riſe, and very conſiderable loſs conſequently enſues. It is the practice to take the lambs off the ewes, between the 12th and the end of July, and the lambs are then ſent to a different grazing, either from off the farm altogether, or to a diſtant part of it, out of the hearing of the ewes, and are in all caſes kept ſeparate from the ewes, for three or four weeks, after which they are allowed again to mix with them; but on thoſe farms, where the lambs can conveniently be kept from the reſt all winter, it is done. The advantages ſuppoſed to be derived from this latter practice, are, the affording to the lamb the beſt ſubſtitute for its mother's milk, by putting it upon graſs preſerved for that purpoſe, thereby taking the beſt chance of rearing it to a good ſize, and pre-

venting the braxy, beſides its being more eaſy to attend to the lambs, during the ſeaſon that they are liable to this diſeaſe, when kept by themſelves, than when mixed with the flock.

The *Braxy*, or *the* diſeaſe, as it is emphatically called, is the moſt deſtructive diſtemper that the ſheep in this country are liable to. In ſome farms it carries off one half of the lambs, in others a third, a fourth, and ſo on, as each farm is more or leſs ſubject to it. It is thought moderate, when only a ſeventh or eighth lamb dies of it, yet no effectual cure has yet been diſcovered for this diſorder. On ſome farms, this diſeaſe continues for no more than a month, but in theſe caſes, the deaths are more frequent in proportion to the numbers and time, than where its of a longer duration; and in a good many places, the effects of the diſorder is felt till January, though it moſt generally begins in October.

The principal ſtocks in this country and Argyleſhire, are ſold to different parts in England, chiefly to Yorkſhire; the wedders when three year old, riſing four, and ſuch ewes as are old, or thought unfit for keeping. The price received for the wedders, is from thirteen to ſeventeen ſhillings ſterling; that for the ewes, from ſix ſhillings and ſix-pence, to eight ſhillings and ſix-pence ſterling; a ſheep to the ſcore, being almoſt always given. The rents paid for the ſheep's graſs, varies from ſix-pence, to three ſhillings and four-pence ſterling, for the paſture of each ſheep; but two ſhillings is thought a fair rent, except in farms that poſſeſs peculiar advantages.

I was informed by the Gentlemen, who diſpoſe of their ſheep to Engliſh dealers, that theſe dealers adviſed them, not to adopt the Cheviot breed, becauſe if they did, they would no longer buy from them, having had thirty years experience

rience of that breed, and found them not ſuch true feeders, conſequently not affording ſuch profit on their keeping, as the black faced breed. This I found weighed much with the ſtore maſters, but, as it is well known, that all animals bred in the Highlands, thrive better than thoſe bred farther ſouth, when carried into England.—I think it might be worth while for the Highland graziers, to make a fair trial of the Cheviot breed. Suppoſing therefore all partiality for any particular breed laid aſide, I would recommend to the Highlandlers, who are in the practice of ſelling their ſheep to Engliſh dealers, to buy in a parcel of Cheviot wedder lambs, as near as poſſible to the weight of their own, and to give them the ſame keeping and juſtice in every reſpect, and when at the age their own uſed to be ſold to Engliſh dealers, to aſk thoſe dealers, to try that Cheviot breed, after being rendered hardy and healthy by Highland climate and Highland paſture. This experiment, as it may be made without any alteration on the preſent ſtock, can be attended with no material riſk, and will go a great length in determining, whether the thriving of the ſheep ſent from the Highlands, to England, depends moſt on the breed, or the nature of the climate and paſture of the Highlands; but the apparent objection, to the Cheviot lambs being dropt ſo bare, will require a farther experimental diſcuſſion.

The ſheep in the weſt part of Inverneſs and Argyleſhire, are very much improved, ſince firſt introduced into theſe countries; and I am informed, that part of Mr. Gilleſpie's wedder ſtock in Glenquaich, Lochaber, was ſold for the Glaſgow market, and weighed twenty-two pounds Engliſh the quarter. I do not ſtate this as the average weight of the ſtock; but there are ſeveral ſtocks, that weigh, at an average, from fifteen to eighteen pounds Engliſh, riſing four years old, and fed upon the hills. The hills in Lochaber, are exceeding fit for being ſtocked with ſheep; even the high tops of the

mountains are green and fine paſture; about mid-hill there is commonly moſs, comparatively flat with the ſteep ſlopes above it, and below that moſs, there is generally, what is called a brae face, which, from the ſpouts iſſuing in conſequence of the flat above, is much covered with ſprots intermixed with tufts of heath growing upon the ſmall heights, formed by the little runs that are collected from the different ſprings.

This ſprotty coarſe graſs, is not eaſily killed by froſt, and is therefore a great reſource to the ſheep in winter, and the tufts of heath ſtanding high and intermixed with it, is of conſiderable benefit in falls of ſnow. In the ſpring, the ſheep go up to the moſs, and there find bent and other plants, that riſe early in ſuch a ſoil. In ſummer, the ſheep take to the high green tops of the mountains, where they paſture and lie at their eaſe, cool and unmoleſted with flies, and without having in view any higher ground, which at that ſeaſon they are reſtleſs to get up to; it being a fact well known, that when ſheep are prevented in ſummer from going to the higheſt grounds, they either have before known, or can ſee connected with the paſture they are in, they do not feed pleaſantly or well, and this obſervation applies equally to them in regard to the low grounds in ſimilar circumſtances during the winter.

This is confirmed by a well known fact, that a blind ſheep confined to one paſture, feeds better than thoſe that ſee, when confined at the ſame time with it.

In Lochaber, Sunart, and Morven, the cattle are all of the Highland breed, except thoſe belonging to Gentlemen who prefer a dairy to breeding; the Highland cows not being reckoned good milkers, in reſpect to quantity of milk, though the quality is in general excellent.

In going down through Glenco, I went to the houſe of M'Donald of Achtrichtan, who, it is believed, has the largeſt farm in the Iſland, being thirty miles long, and from three to four miles broad. It is, however, almoſt altogether fed with ſheep, Mr. M'Donald having only twenty milch cows, ten of which he kept near his houſe, the other ten he hired out to his principal ſhepherd, for the uſe of which, the ſhepherd paid Mr. M'Donald, five pounds ſterling each, and reared for him two quey calves, or heifers, yearly, to keep up the ſtock.

The graſs on which the cows are fed by the ſhepherd, belongs to Mr. M'Donald, and he is at the expence of a herd, to attend to the cows in the day time, and a woman to aſſiſt in milking.

Except the two queys that are reared by the ſhepherd, Mr. M'Donald takes off all the other calves as ſoon as dropt, and ſells them directly. Mr. M'Donald keeps the cows, hired to the ſhepherd, during winter. Mr. M'Donald's cows, ſo far as I can judge, are a croſs between the Dutch and the Highland breed, and it appears to me, that the cows hired at this rate to his ſhepherd, afford the earlieſt, greateſt, and ſureſt profit, that is drawn from cattle, to the beſt of my knowledge, in this part of the united kingdom.

It is looked upon as a high price, when three year old queys or ſtots, ſell at five pounds each, though every calf be commonly reared by two cows; this, though reckoned a high price for three year olds, falls very much ſhort of Mr. M'Donald's profits; beſides the riſk of keeping theſe cattle for three years, and conſequently the additional capital employed.

The herd, I underſtand, makes up his hire for the cows, by ſelling butter and cheeſe, in general to perſons employed in

in a ſlate quarry about four miles diſtant. The cheeſe he ſells when half dried, at about five ſhillings and ſix-pence or ſix ſhillings per ſtone. The butter at fourteen ſhillings. In both caſes, twenty-four pounds Engliſh are allowed to the ſtone. The herd, from the retiredneſs of his dwelling, has no opportunity of turning the refuſe of the dairy to account, and is not in the practice of feeding ſwine, as is ſo common in other dairies.

Mr. M'Donald's grazings, are, I confeſs, very good; but yet I think many others, now under a breeding ſyſtem, might afford nearly double the profits, by following Mr. M'Donald's example.

The manner of rearing calves, in the diſtrict before-mentioned, is to ſuckle one calf by two cows, and is called coupling; by this method of rearing, it is in the power of the owners, to make a very nice ſtock, as they can pick the one half of the calves out of the whole.

The cattle bred in Lochabar, Sunart, and Morvin, are reckoned very good feeders, none ſell higher in the market than theſe cattle, and thoſe of North Argyll and Cowall, they being not only eaſy fed, but likewiſe feed to a greater weight than many others, upon equal paſture, and when killed and cut up by the butchers, they are ſaid to fetch one penny per pound more than any beef in the market, at leaſt in England. It is alſo proper to obſerve, in reſpect to thoſe cattle, that from natural good conſtitution and conſtruction of parts, they are little liable to diſeaſes of any kind; and what is of infinite importance, their natural paſture, ſeems to have exempted them from that deſtructive diſtemper, the moor-ill or bloody water. Their natural hardineſs may in a great degree be accounted for, by obſerving that they run out all winter, and that even the cows are not houſed till near calving time.

The horſes kept in North Argyll and Lochabar, are chiefly of the highland breed, with the exception only of a few of the low country kind, that are kept by gentlemen, who have good ſtables, and proper provender for them in winter. The mares kept upon the hills, are very profitable and ſure ſtock, becauſe highland horſes, ſince ſheep were introduced, have been much baniſhed; and therefore, both from that circumſtance, and their hardineſs, they ſell higher, their ſize conſidered, than any other.

In Lochabar, Sunart, and Morvin, theſe animals run out all the winter, and ſhift for themſelves, until their owners begin to plough the little arable land, that they keep under crop; and even when thus taken from the provender of nature, and after being expoſed to all the ſtorms in winter, yet they are found equal, to all the labour, that their owners have occaſion to demand of them.

If proper ſtallions were procured, and only the beſt mares covered, the breeding of theſe ſmall horſes muſt turn out a very profitable buſineſs, as they are ſo eaſily kept, and hardly liable to any diſeaſes. Stallions from the mountains of Spain, it is generally believed, would be moſt proper for this purpoſe. It may not here be improper to ſuggeſt, that while the advantages of a ſheep ſtock, has attracted the attention of the greater part of the highlanders, that an intelligent man might find, an ample reward in applying his attention to the breeding of ſuch horſes, eſpecially during the period, when all but the ſheep ſyſtem ſeems to be neglected.

The gentlemen in the diſtrict before mentioned, plough with two horſes, but the ſmall tenants uſe four abreaſt.

The

The crop this ſeaſon, in theſe parts, was in general very good, but much hurt by the conſtant rains. I ſaw upon the glebe, belonging to Mr. Roſs, miniſter of Kilmanivaig, as good a crop of oats, potatoes, and beans, as could have been expected, in a lower and more fertile country, but the rainy ſeaſon had hurt it much. Mr. Roſs informed me, that they had five weeks of rain, without one dry day.

I went with Mr. Roſs, to wait upon his neighbour, Mr. Barnett, who was ſent from Aberdeenſhire, by the late Ducheſs Dowager of Gordon, to improve a farm in this country. After converſing with Mr. Barnett, upon the improvements he had attempted, I found his opinion to be, that nature had pointed out this for a grazing country, both by the coldneſs and wetneſs of the climate; and though a promiſing crop might be raiſed, yet, before it could be put in the barn, the expences, including riſk, would be found to exceed the coſt of purchaſing meal and grain, from diſtricts more favoured in reſpect of climate: Mr. Barnett has, therefore, gone into the country management and raiſes conſiderable quantities of potatoes, with only as much oats and beans, as will anſwer his unavoidable demand for ſtraw.

The farms in Lochaber, are in general large; the farm houſes and offices bad, and ill conſtructed, except a few lately built by the proprietors for themſelves.

I ſaw at Mr. M'Donald Achtrichtan's, a ſtable, byer, and barn, under one roof; the barn is above the two former, and Mr. M'Donald uſes it for drying his hay, for which purpoſe, there were in it branders of wood.

Encouragement given to the tenantry to build their houſes upon a ſcale proportioned to their farms, would be of great utility in ſo wet a climate.

There are no manufactories carried on in this country; but at Balbochaeliſhh there is a ſlate quarry wrought, and about ninety men employed in it; every four men, which is called a crew, are ſaid to quarry one hundred and four thouſand ſlates in a year, for which they receive fifteen ſhillings per thouſand.

Leaving Lochaber and bending my courſe towards Sunart and Ardnamurchan, the property of Sir James Riddel, Bart. and croſſing Loch Sunart to Morvin, in all which diſtricts I found the ſtocks the ſame and managed as in Lochaber.

The hills I ſaw in going from Corran Ardgour to Strontian, appeared rocky, dry, and barren, and ſeemed better calculated for feeding the ſmall ſheep, they are likely to rear, than for rearing heavy ſheep.

In Morvin, the hills are not ſo high as in Lochaber, and are generally covered with heath on the top, excepting on a part of Mr. M'Lean, of Ringarloch property, where there are beautiful green hills on the ſide of Lochgarloch. I went to the houſe of Mr. Rankin, at Kingarloch, who farms a very extenſive grazing from Mr. M'Lean; and from Mr. Rankin's, I went to Mr. M'Lean's, at Glenſanda, both Gentlemen I found moſt obliging, and deſirous to aſſiſt me by their information.

Upon this ſouth-eaſt ſide of Morvin, there exiſts a diſtemper to which the ſheep are liable, which is called the Sharg, or decline; the ſheep linger a long time before they die of it. I had formerly heard of this diſeaſe affecting ſheep upon a part of Sir Alexander Ramſey's property, which lies north

from Motroſe; the cure there practiſed, was carrying the ſheep to low paſture on lime ſtone rock, which recovered them in a very ſhort time.

The horſes in Morvin, Ardnamurchan, and Sunart, are reckoned both hardy and active, and the firſt improvement ſaid to have been made on the natural breed in theſe countries, I am informed, was by Sir Alexander Murray's bringing ſtallions from the mountains of Spain, when that family had property in theſe parts.

At Stontian in Sunart, there is an extenſive lead work, carried on by an Engliſh Company; Mr. Warrin, the acting partner, gives employment at preſent to about two hundred men, and expects ſoon to have occaſion for one hundred more, from the lead ores turning out beyond expectation.

I next went to Liſſmore, and waited upon Mr. M'Nicol, the miniſter of that pariſh, who received me in the politeſt manner, and went with me through the Iſland, ſhewing and informing me of every thing neceſſary, relative to the buſineſs I was employed in.

Liſſmore is ten miles long, and from two to three broad. It is chiefly occupied by ſmall tenants, who keep almoſt all that can be ploughed under crop.

This Iſland is divided among, at leaſt, four proprietors. Its ſoil is a rich black loam, upon limeſtone. It is ſo very black, that it looks like moſs, and feels like ſoap, when wrought in the hand.

The crops raiſed here are oats, potatoes and beans, and of late, ſome flax. The greater proportion of the arable land is under beans, it being frequently ſown two or three times ſucceſſively on the ſame fields. No green crops are here raiſed

raiſed by the tenants, but I ſaw a ſmall field of clover, belonging to Mr. M'Nicol, which looked remarkably well. There is no regular cropping practiſed in this Iſland: On ſome farms as already ſtated, the tenants ſow beans in the ſame ſpot of ground three years ſucceſſively, then two crops of oats, and afterwards they plant potatoes. The infield is conſtantly in crop, and when the outfield is allowed to lie a year or two in paſture, the tenants, in November, take ſpades, and dig ſome earth out of the furrows and throw it on the ridges, which is here called fallowing, and the ſpring following ſome of them ſcatter a little dung on theſe ridges, and plough them for bean or big. Under this mode of management, the crops in Liſſmore were very good this ſeaſon, but much hurt by the rains.

Over all this Iſland, there is an inexhauſtible quantity both of rock and ſhell marle, and ſince the duty has been taken off coals, there is abundance of lime burnt, and ſold at nine-pence per boll, of three Argyleſhire furlots. I cannot here omit noticing the advantages that muſt ariſe to the inhabitants of this remote quarter of the country, from the duty being taken off coals; not only from its leſſening the expence of the neceſſary firing in their families, but by their being thereby enabled to burn lime to themſelves, and probably for exportation, which will prove an inexhauſtible reſource of induſtry and employment to a number of indigent people, hitherto almoſt without any means of bettering their ſituation, or even ſupporting it.

It is with difficulty the ſoil is ploughed here, owing to the limeſtone rocks, which ſtand up through it, but in ſuch ſharp points that the ſurface at leaſt might be rendered paſſable for the plough by breaking them off. There is little lime, &c. uſed in Liſſmore, as from want of roads, they cannot uſe carts, and are obliged to carry every thing on horſeback. Runn Rigg is the ſtate of the farms here, which will, while

continued, prevent induſtry in the tenants, as each ploughs his neighbour's rigg the ſucceeding year, and this ſyſtem occaſions many diſputes.

There are no proper incloſures in the Iſland, but almoſt the whole of it, might, at a very moderate expence, be incloſed, by uſing the limeſtones, which at preſent incumber the fields; and were it laid into proper farms, and each farm divided into proper incloſures, a certain number of theſe fields might then be left in rotation, for ſome years in paſture, which would greatly meliorate a ſoil worn out by conſtant tillage; and would enable the tenants to rear good cattle, which ſeems to be the live ſtock, beſt adapted to this place, as they admit of being driven to diſtant markets; and the plentiful crops of grain, that this ſoil ſo treated would yield, muſt put it in the power of the tenants to afford theſe cattle plenty of fodder in winter, which is there naturally very mild.

The tenants here, are in the practice of ſowing one half more ſeed than is neceſſary, from an idea that this makes the crop not ſo liable to lodge. Mr. M'Nicol informed me, as a proof of the richneſs of the ſoil of this Iſland, that all common greens planted in it, naturally, cabbage.

The tenants here uſe four horſes in their ploughs, two and two, but two well trained ones, would certainly anſwer better in ſo free a ſoil, and only rendered difficult to cultivate by the number of rocks and ſtones. The ſheep kept in Liſſmore, which are moſtly of the white faced breed, certainly occaſion more expence than advantage to their owners, who, on ſuch confined paſtures, with difficulty keep them from their corn in the day time, and are obliged to houſe them at night. Mr. Campbell, of Combie, a proprietor in this Iſland, has of late introduced the Cheviot breed of ſheep.

Leaving

Leaving Liſſmore, I ferry'd over to Shuna, waited on Mr. Allen Stuart, and went the next morning over the Iſland with him.

The ſoil in Shuna, is much the ſame as in Liſſmore, Mr. Stuart rents the whole of it, from the Marquis of Tweedale, and keeps the greater part for paſture. I looked with Mr. Stuart at a flock of ſheep he then had; he told me he had attempted the fattening of them here, but found the markets too diſtant to admit of driving them when fat, which has induced him to think of relinquiſhing the ſheep ſyſtem altogether, as he pays too high for the land to admit of his attempting to rival the graziers on the main land, in a breeding ſyſtem, which it is even doubtful, might not anſwer from the richneſs of the paſture.

From Shuna, I took the road to Oban, croſſing Loch Eta and Connel Ferry's, I found the country on my way chiefly under a grazing ſyſtem, with ſome arable on the coaſt. I intended, in going to Oban, to have waited upon Mr. Campbell, of Barcaldine, and Mr. Campbell of Ballivoalan, gentlemen who pay great attention to the rearing of the beſt breeds of Highland cattle, but having been wrong directed, I paſſed their properties long before I knew it, and the wind blowing hard, I did not think it prudent to venture and attempt to return.

At Oban, I was informed, that about ſix or ſeven years ago, there was almoſt nothing going on there, which ſurprized me much, on ſeeing the number of good houſes now built. It has a very commodious and ſafe harbour, where I am told veſſels of almoſt any burthen may lie in perfect ſafety. Oban is ſituated about ſeven miles from the entry to the ſound of Mull, the common tract for moſt of the Baltic ſhips and other veſſels going to and from the herring fiſhing.

I went

I went to the top of a hill, a little weſt from the place, where I had a view of the ſound of Mull, and could diſtinctly number one hundred and fifty veſſels, ſailing ſouthward from the northern Iſlands, and was informed that the moſt, or perhaps all theſe veſſels, were loaded with herrings, and a few of them came into the harbour in the evening.

I learned that a number of veſſels, from ſixty to two hundred and twenty tons burthen, had been built here by two brothers, Hugh and John Stevenſon, who came from the low country of Scotland, about ſeven years ago; and I am likewiſe informed, that the preſent ſtate of this place, has been very much owing to their ſpirited enterprizes. Theſe gentlemen have eſtabliſhed a tann work, from which they ſupply with leather the moſt part of that country, together with Mull, Morvin, and the Iſlands to the north; they are alſo fitting up a brewery, which, with the ſtock of grain neceſſary to begin the work, will, I am informed, coſt eighteen hundred pounds ſterling.

This brewery has every chance of ſucceeding, becauſe the ſtrong ale and beer can be ſent by water to the greater part of the diſtricts round it, which will be a great convenience to the richer ſet of people, in a country where every thing of the kind muſt otherwiſe be brought from a great diſtance, and will be a great benefit to the poorer ſort of people, by affording them good beer to drink in place of ſpirits. The proprietors of this work are likewiſe in expectation of having a demand from the coaſting veſſels and Baltic ſhips, that are often wind bound going to and from the ſouthward.

I am told that ſeven years ago there were only about one hundred ſouls in Oban, but that now they amount to between ſeven and eight hundred.

I underſtand,

I underſtand, that owing to the fall of cattle, kelp, fiſh, and wool, the natural produce of the weſt Highlands in general, building and improvements are at preſent rather at a ſtand here. The inhabitants of Oban, were in expectation that the Britiſh Society would have aſſiſted them, in making a ſmall quay and breaſt-work, for loading and unloading their gooods.

A number of people here, and in the neighbourhood, have, I am informed, ſubſcribed a ſum for erecting a machine to be driven by a horſe, for carding of wool, to be ſpun upon jennies; and if ſucceſsful in this trial, they intended to extend the work upon a larger ſcale; the market they expected for the yarn, was Lancaſhire, and other parts in the weſt of England. In my opinion, if this plan can be carried on, it will be of great advantage to the country, by employing the hands in it in the manufacture of its natural produce, beſides a ſaving on the expence of carrying the wool to England, as one ſhip load of yarn, would I ſuppoſe, be equal to at leaſt four ſhips loaden with wool; but I am ſorry that there is ſo little appearance of this uſeful undertaking going on, notwithſtanding that there is already a houſe built for the purpoſe, and part of the machinery made. Mr. Dale of Glaſgow, and others, had eſtabliſhed ſmall branches of the cotton manufacture in and about Oban, and employed a number of hands in weaving coarſe muſlins, &c. but have of late ſtopped that buſineſs.

From Oban, I ferry'd over to Kerrara; went to Mr. M'Dougall's farm, and ſaw there his Highland breeding cows, and afterwards their calves; both exceed any cattle I have yet ſeen on my journey. The cows are handſome, and ſtrong, and their calves ſhew that the breed is improving, as among them, there were ſome of the beſt I ever remember to have examined.

Mr.

Mr. M'Dougal informed me, that he was at great pains in procuring good bulls. He uſes a great quantity of ſhell-ſand, both upon his arable and paſture lands, and finds it anſwer well; he informed me, that he had ſome three year old queys, for which he refuſed this year, ſix guineas, notwithſtanding the preſent low prices.

It is common, in thoſe parts of Argyllſhire, where the grazing ſyſtem under black cattle prevails, for ſubſtantial tenants to pay from twenty to thirty guineas for a Highland bull, and from ten to fifteen guineas for the beſt cows of that breed.

From Oban and Kerrara, I proceeded down through Nether Lorn, on the ſouth-ſide of Loch Feachan, where the hills are exceeding fine green paſture, and ſtocked with black faced ſheep, and Highland cows in the valleys.

In Lord Breadalbane's property, that ruinous practice run rig is done away, and the tenants are reſtricted to keep their outfields three years in paſture, and only two under crop. In all this diſtrict the ſame kinds of grain are ſown; to wit, oats and beans; with large quantities of potatoes; and the management of the land is alſo nearly uniform. The tenants here, are now beginning to plough with two horſes, inſtead of four a-breaſt, thereby ſaving not only the keep of two horſes, but the money veſted in them.

From Nether Lorn, I went to the Iſland of Eisdale, which is about four miles long, and from one to two broad; it is the property of Lord Braedalbane, and there are three hundred people employed there in quarrying ſlates; it is very populous and occupied by ſmall tenants. There is plenty of lime in it, though not of ſo good a quality as in many other parts of Argyllſhire. Lately a fine bridge was built between

between this Iſland and the main land, which is of great advantage to the inhabitants. From Eiſdale, I meant to have waited on Mr. Campbell of Lochend, but learned he was not at home; I therefore croſſed the hills to Milford, and obſerved in my way, a few white faced ſheep, which the owners informed me they kept, becauſe better milkers, and leſs liable to be hurt by houſing than the black faced ſheep. I alſo obſerved ſome goats paſturing in a wood, to which theſe animals are very deſtructive, as they deſtroy the bark as high as they can ſcramble by the aſſiſtance of the branches.

Having been informed that Capt. Neil Campbell, kept upon a grazing rented by him, as fine a ſtock of Highland cows, as any in Argyleſhire; I therefore went and looked at part of them, and found them completely juſtify the accounts I got of them; for though I have ſeen ſeveral ſtocks of greater weight, yet I do not remember to have met with any cattle better made, being ſtrong and ſhort in the ſhank, well haired and bodied, with a well turned ſmall horn. Having viewed theſe cattle, I went on to Milford, and found the ſtock much the ſame. On the ſide of Loch Milford, there is a large wood, conſiſting of oak, aſh, elm, &c. and full grown. I likewiſe obſerved ſome young growing oaks, which, as well as the full grown timber, were in a very thriving ſtate, notwithſtanding that an opinion is entertained that planting will not thrive ſo near the ſea. In paſſing the end of Loch Milford, I obſerved the cattle feeding very eagerly upon the ſea ware, and following the going out of the tide for that purpoſe as far as they could. After having filled themſelves with this ware, I am informed they go to freſh water and drink plentifully, and then lie down for a conſiderable time. They return regularly for this meal at the ebbing of every tide.

Leaving Milford, I went over the hills to Kintra, where I was informed, that run rig is ſtill in uſe, and that no leaſes are granted except to ſome graziers.

At the end of Lochtra, there is a beautiful flat of arable land, which if incloſed and divided, is capable of great improvement, and the means of doing ſo are at hand, as the Loch throws out a great quantity of ſea ware, and the lime rock is at no great diſtance and plenty of peats to be had.—The hills about Kintra are beautiful and green, and covered with ſheep, under the ſame management as in the reſt of north Argyll.

From Kintra, I went over the hill to Killmartin, by a very good new road, made laſt ſummer, which will be of great advantage to the country round Kintra, as it opens an eaſy acceſs to Lochgilp, or Crinan canal. From Killmartin to this propoſed canal, there is a fine open country, and a conſiderable tract of very good arable land. If the moſs at Crinan were improved, which there is every reaſon to hope will be the caſe, it will make a beautiful plain, as the crops I ſaw on the parts already cleared were exceeding good. I am informed that perſons from the Flanders moſs near Stirling, have taken a tract of this moſs, in order to clear it and improve the ſoil under it. The moſs is from two to four foot thick, and the ſoil below a tolerably good clay. From Lochgilp head, I went to Tarbet, and found in my way an almoſt continued wood, conſiſting of birch, aſh, arn, and ſome oak. From Tarbet, I went to White-houſe, and ſtill found wood; from thence I went to Campletown. The wood laſt mentioned is well incloſed and preſerved.

The ſoil in Kintyre, along the ſhore, is light and gravelly; further back it is a light loam. The crops raiſed are oats, beans, bear and potatoes. This country is arable, that is the tenants here pay their rents from their crops of grain.—There is but little of it incloſed, and that which is, only by feal dykes; but there are plenty of ſtones even in the arable lands. There are no other green crops raiſed here, but beans

and potatoes, as the tenants, from want of ſufficient incloſures, cannot protect turnip and ſown graſs, and have thereby been diſcouraged, in any attempts they have made, to raiſe theſe articles; and being thus deterred from, and never having experienced the advantages of theſe crops, particularly the ſown graſs, they continue to waſte their land by conſtant cropping of almoſt the whole of it, which puts it out of their power to manure it properly. Even in an Highland diſtrict in Perthſhire, I know the tenants drive coals from twenty to thirty miles, and limeſtone ten or fifteen miles, to meet theſe coals, and burn it on their farms, and find their advantage in ſo doing; yet though there be coal wrought in Kintyre, and limeſtone to be got, yet little of it is burnt for the land. Fallowing has been tried, and found to anſwer well. I was informed by Mr. Longlands, who is employed by his Grace the Duke of Argyll, to attend to the improvements of his property by his tenants, that their implements of huſbandry are bad, and that though there are good plough and cartwrights at Campletown, yet they perſiſt in making every implement they can themſelves, in their own coarſe way, and I ſaw ſome of their ploughs, which were of themſelves a ſufficient draught for one horſe.

Mr. Longlands likewiſe told me, that his Grace, in place of raiſing his tenants rents, even upon nineteen year leaſes, which is the term commonly given, rather takes them bound to incloſe and drain a certain portion of their farms.

Between Campletown and Southend, there are ſome farms incloſed by ditch and hedge; but I obſerved no palings. However, where the thorns are properly cleared, they are thriving well, but where that is not the caſe, they do not promiſe to be of any uſe.

The black cattle in Kintyre, are of a thin light make, and not well hair'd, excepting on a few farms, where the tenants

have the north Argyll breed. I am informed that the cattle belonging to the ſmall tenants, are a croſs between the Iriſh and the old Kintyre breed, which produces a very bad kind of ſtock. Liſſmore and Kintyre, are, properly ſpeaking, the only arable counties I met with, in my ſurvey, and I found in them, what I had formerly obſerved in other parts, where the arable ſyſtem prevails, that there is almoſt an intire neglect of the live ſtock; and I have alſo obſerved, that from that neglect, excepting in the moſt favoured ſpots of Scotland, both in reſpect of the good quality of the ſoil and climate, the intelligence and capital of the tenantry, or advantages in procuring foreign manure, that the tenants are but in rather indifferent circumſtances, though they pay a much leſs rent than might be afforded, under a judicious mixture of the grazing and arable ſyſtems.

The horſes in Kintyre, are long legged, and weak made animals; ſome good ſtout made ſtallions would, therefore, be of much uſe in that country.

The ſheep in Kintyre, are moſtly of the Highland white faced breed, and are houſed at night to obtain manure.—They do not weigh above eight pounds Engliſh per quarter. The little wool they carry, is fine. There are two farms in Kintyre, on which there is a kind of ſheep that have four horns, two of which riſe almoſt perpendicular, the other two turn in below the ſheeps ears. Theſe weigh much the ſame as the common kind.

At Campletown, there is an excellent harbour, where ſhips lie ſafe from all ſtorms. There arrived, while I was in it, thirty-nine veſſels, which, I was informed, had, at an average, twenty-ſix laſts of herrings each, twelve barrels to the laſt. Total, twelve thouſand one hundred and ſixty-eight barrels.

There are no manufactures in Kintyre, except a tann-work, at Campletown, and a bleach field near it, carried on by Mr. William Longlands, who was bred to that buſineſs at Carliſle. This bleachfield meets with good encouragement. Before it was begun, the cloth of the country was ſent to be bleached, at Greenock, or in Ireland.

The coal that is wrought in Kintyre, lies about four miles weſt from Campbletown, and there is a canal made from thence to the pit, on which there are two flat bottomed boats employed.

On leaving Campletown, after travelling about ſix miles, I found very little arable land, as from Saddle to Tarbet, the country is chiefly in grazing, and the ſtock, ſheep and black cattle. The ſheep belonging to the ſmall tenants being moſtly of the white faced breed.

The hills in Kintyre are low, and covered with heath on the tops; and as hardly any ſnow lies in this country, it is excellent for wintering. The heath in many places is old and ſtrong, and if burnt, would not grow again; eſpecially in the hollows or glens, where the ſoil is tolerably good or wet, and good graſs would riſe in place of it. Indeed, even were this attended to in general over the Highlands, the herbage might be much increaſed. Here, however, it is only on the tops of the hills, where the ſoil is poor and dry, that the heath is burned, and conſequently it riſes again. In diſtricts where the ſnow lies, it is of importance to preſerve the heath upon the heights, as they are generally blown bare of ſnow, and conſequently afford food for the ſheep when none elſe is to be had.

On my return from Kintyre, I went to Mr. Sinclair's Inn, at White-houſe; he is a tenant of Lord Stonefield's; I found

found him an intelligent farmer, eager to make improvements, and trying many experiments himſelf. He informed me, that for the firſt time he had laſt year ſown beans, and in order to make the experiment as accurate as poſſible, one half of the quantity was ſown on good land, in good order, the other half on a light loam. To his ſurprize, he had an excellent crop upon the latter, but that on the former, was ſcarcely worth the cutting down. This might have been owing to the uncommon wetneſs of the ſeaſon; but I have obſerved, that in Kintyre, good crops of beans are raiſed on light land, and therefore conclude, that the ſoil being light, does not form an abſolute objection to that crop.

I went with Mr. Sinclair to a meadow on the ſhore, where, at about eighteen inches below the ſurface, he dug up oyſter ſhells, which, when expoſed to the air, he informed me, mouldered; and he alſo ſaid that this bed of ſhells, was about three feet thick, and that when they were laid upon the coarſeſt ſpot of heathy ground in his farm, they had the effect of producing the beſt natural graſſes, the ſecond ſummer.

On my return from the ſhore, Mr. Sinclair, to my ſurprize, took me into a field of turnips, which were the firſt I had ſeen in my journey. They were of a good ſize, and as large as, he ſaid, he wiſhed them; he gave them to his cattle when upon the bear (barley) ſtraw, from which he found conſiderable benefit to his working and wintering ſtock. Beſides that, his cows gave more milk, and both them and the young beaſts, were in better order.

From White-houſe, I went to Eaſt Tarbet, where there is a ſmall harbour in which veſſels take ſhelter, and the inhabitants live principally by fiſhing herring, in which they have been ſucceſsful this ſeaſon.

From Tarbet, I returned to Lochgilphead, and proceeded up to Inveraray. In my way I obſerved little arable land, almoſt the whole being paſture, and the ſtocks the ſame as in north Argyll. The cattle are kept in the valleys, and ſheep in the hills; but they are allowed to come down in winter. About half way between Lochgilphead and Inveraray, I found a large oak wood, which is cut when about twenty-five years old; and a little further on there is a carpet and blanket manufactory, which, it is to be regretted, has not as yet thrived as could be wiſhed.

From Inveraray, I ferry'd over to St. Katharine's, in Cowall, which is chiefly in grazing; the hills are high and green, and ſtocked with black faced ſheep as in north Argyll.

The oak woods, on the eſtate of Ardkinlaſs, are well preſerved, and weeded in proper ſeaſon.

On my return to Inveraray, I waited on Mr. Hall, overſeer to the Duke of Argyll, who ſhewed me his Grace's cattle. I found the Highland cows there, heavier than any I have ſeen, though hardly ſo well made as ſome of the beſt ſtocks in north Argyll. The breed might be improved in ſhape, by getting bulls from ſome of theſe beſt ſtocks, of the true Argyll breed, which though ſmaller, were more compactly made, and much better hair'd. If this plan be followed, his Grace's cattle will be under the ſize that his paſture can rear to, but the conſequence will be, that thoſe bred, will be improving, hardy, and thriving.

I cannot omit here mentioning, that in my opinion, the ſafeſt and beſt method of raiſing the ſize of cattle, is, by bettering their food, and breeding from the beſt quality of cattle to be found in that diſtrict or country, which reſembles in point of climate, the farm on which you mean to breed, always

ways preferring the hardieſt breed, every thing elſe being equal; and I would further venture to recommend, when the paſture ſeems with difficulty to uphold the ſize to which you have bred your cattle, that you ſhould again reduce it, by bulls from a leſſer ſize and hardier bred ſtock.

From the Highland cattle, I went with Mr. Hall to his Grace's fold of Galloway cows, which are of a good make, broad, deep, and ſhort legged, and, I ſhould think, better for rearing from, than keeping as milkers. We went next to the milk cows, which appeared to me to be a breed between the Dutch and Lancaſhire.

After looking over the different folds, Mr. Hall took me to ſee a farm in Glenſhira, where his Grace had erected a barn, in which Mr. Hall ſaid, the corn crop of thirty acres might be dried, on pins put up for that purpoſe. In this and another barn in Glenera, he informed me, that there was forty-five thouſand ſtones of hay dried this year. I ſaw part of the hay, which was remarkably green and freſh, and better than what is generally dried out of doors.

The fine timber trees about Inveraray, are too well known to need my mentioning them; and they render it evident, that wood thrives well on that coaſt. I am informed alſo, that the Argyleſhire oak is equal to the Engliſh, for the inner timbers of ſhips; but the frequency of returns to the proprietors, from keeping the oak in coppice wood, both by the high price of bark, and the demand for charcoal in that quarter, where it is uſed in ſmelting iron, naturally induces theſe proprietors to keep their woods in coppice.

From Inveraray, I went down Glenurchy, to Mr. Campbell, of Sonnachans, from whom I received the utmoſt civility. Mr. Campbell obſerved, that one of the greateſt ob-

ſtacles to improvement, was run rig. Alſo two ſmall farms, and conſequently no incloſed land for hay to ſupport the winter ſtock. He does not approve of hedges in the Highlands, becauſe the cattle are ſo wild, that it is difficult to rear a hedge to keep them in, and when a ſheep ſtock is kept, the wool ſuffers from the hedge, and the hedge from the wool.

Mr. Campbell of Auch, has this year tried a conſiderable number of the Cheviot breed of ſheep, and hitherto approves of them, and intends getting more. The farm on which he has bred them, is a low lying one.

Glenorchy is chiefly in grazing, and ſtocked with black faced ſheep, and cattle of the ſame breed as in north Argyll, and both are managed as before deſcribed. Though there is abundance of lime in Glenorchy, and though the tenants have of late laid it on their lands, yet the want of incloſures prevents them from ſowing graſs ſeeds, and conſequently deprives them of hay crops, one of the principal advantages, that ought to be looked for, from the uſe of lime in Highland diſtricts.

The great lines of roads through Argyleſhire are generally good; but there is little done to the parochial ones: indeed the convenience of water carriage, exempts the people in Argyleſhire, from the abſolute neceſſity of an expenſive attention to the roads; and it is well known, that neceſſity is the only productive mother of induſtry, particularly when the ſubject upon which that of induſtry is to be exerciſed, is common to all.

GENERAL REMARKS.

THOUGH ſome parts of the diſtrict I have ſurveyed, ſeem to be exceedingly fit to produce grain, and though in thoſe parts, there be alſo ſufficient quantities of arable land, lying contiguous, to be formed into farms; yet I am of opinion, that conſidering the wetneſs of the climate, both tenant and proprietor, would find more advantage in uſing theſe grounds, principally for green crops and paſture, as they might, under this ſyſtem, be rendered very profitable in feeding and keeping longer in good order, the cattle and ſheep bred on the ſurrounding poorer and colder diſtricts, eſpecially, if any method could be fallen upon, of conveying to diſtant markets, by water carriage, the carcaſes of the ſheep, either dead or alive; with reſpect to which, I ſhall afterwards venture to hazard ſome ſuggeſtions. After what has been ſaid, as to more favoured ſpots, inreſpect to an arable ſyſtem, it cannot be neceſſary to enlarge upon the impropriety of puſhing that ſyſtem, in the interior parts of the diſtrict; I have endeavoured to deſcribe, where in moſt caſes, the proportion of low ground, though even all kept for winter food, is naturally rather ſmall, compared to the ſummer paſture, and where therefore, a tenant is expoſed to loſſes in ſevere winters, that eats up the profits of former years, even when as much proviſion as poſſible for winter is ſaved. In diſtricts, therefore, like thoſe laſt mentioned, no land ought to be ploughed, but with a view to increaſe hay or paſture, and is abſolutely neceſſary to afford ſtraw and potatoes, as all grain and meal, can eaſily be procured from diſtricts, more favourable to the arable ſyſtem, and the profits ariſing to the grazier, from turning all his low grounds

to the beſt account, for winter food to his ſtock, will amply indemnify him, for the expence of bringing meal, &c. from a diſtance.

The habits and practices of country people, are not to be altered but by time, perſeverance, and moderate meaſures. It is nearly thirty years, ſince ſheep, (that only animal, which can render a mountainous country productive of a great quantity of human food) has been introduced into the Highlands; yet that ſyſtem, may not improperly be ſaid to be only in its infancy.

Theſe obſervations being, I truſt, well founded, I would therefore, humbly ſubmit to the Board, the propriety of directing its endeavours, to the encouraging of Highland farmers, to attend to the quality of the wool, of that breed of ſheep, which they already have, and ſeem to have a predilection for, rather than riſk the reputation of what are eſteemed better ſorts, by inducing raſhand ſpeculative people, to engage in experiments on theſe new breeds; though at the ſame time I think, that every ſober minded and cautious tenant, that can be prevailed upon to give theſe new breeds a fair trial, ought to be encouraged ſo to do; and I have before ſuggeſted, what might be the ſafeſt means, of making a trial of the Cheviot breed in the Highlands.

I ſhall further venture to recommend to the Board of Agriculture, to employ two, or perhaps three men, converſant in the Highland ſheep grazing ſyſtem, each of them to viſit annually, certain diſtricts of the Highlands, and report to the Board, thoſe farmers that were moſt ſucceſsfully attentive to the quality of their wool, the goodneſs of their rams, and to explain to the ſheep graziers, the beſt practices in the management of the ſheep for the improvement of the wool. If the Board could alſo aſſiſt theſe men, in pointing

out to the wool growers, the beſt markets for the different qualities of wool, that circumſtance would tend more to produce attention to the quality of wool, than any premiums that can be given, as there is a great difficulty in diſtributing them equitably, and they are never conſidered at beſt, as more than a temporary catch by the country people, and therefore, will not for a long time affect the uſual practice, which muſt ever depend, upon the general market profit ariſing from that practice.

I have had frequently occaſion to mention, the want of attention in the Highland graziers, to the quality of their wool, and I have alſo hinted, at the impropriety of the mixture they uſed in ſmearing, which, though it does not appear on the ends of the wool, until the heat of the ſun brings it there, yet then, the ſide of the ſheep appears almoſt as black as pitch; and though this wool, when ſhorn, gratifies the ignorant grower by its weight, yet, as all theſe ends of the wool, in which the tar is lodged, is burnt, and conſequently loſt to the manufacturer, beſides the expence he muſt incur, in endeavouring to clean it as far as he can. That loſs of wool, and expence in cleaning, muſt, and will ultimately be deducted off the price paid to the grower, beſides the expence of carrying from a diſtance, to the manufacturers warehouſe, a commodity, a part of which muſt afterwards be thrown away as uſeleſs.—Country people, are ignorant of the advantages to be derived in trade, from an exact attention, to making the quality of their goods as perfect as poſſible, and ſtill leſs are they informed, as to the advantages of dealing fairly with their cuſtomers. It would be therefore of great importance for the Board, to ſend into the different diſtricts of the Highlands, men that were capable of ſorting wools, teaching the graziers ſo to do, reporting to the Board the diſtricts where they found the tenants moſt tractable to their directions, and the wool of the better qualities; and theſe re-

ports ought to be *publiſhed in all the newſpapers*, as an encouragement to the attentive, and a check to the ſlovenly.

The mixture that I would recommend for ſmearing, is four Engliſh pounds weight of butter, to one Scotch pint of tar, with which about ten ſheep ought to be ſmeared. This mixture, in point of expence, compared with that already mentioned, as now moſt generally practiſed, would occaſion a ſaving of about one penny per ſheep; and I have found from experience, that the wool of ſheep thus ſmeared, is eaſily waſhed, anſwers the purpoſe of ſmearing to the ſheep, and leaves the wool thus ſmeared, better in quality than ſmeared wool; though the former, muſt, by being ſmeared in the method preſcribed, conſiderably outweigh the unſmeared wool.

The Board of Truſtees, I underſtand, are in the practice, of giving premiums for the beſt rams; but I have not learned, that any pains has been taken, to exclude from competition, thoſe rams which have grey tails, blue necks, or grey wool, which can only be diſcovered in a grown ſheep, by examining the wool to the bottom; yet as the graziers, in picking out the lambs they mean to keep for rams, pay little attention to any thing but the bone and ſize of the lamb, it would be of importance, to check this inattention to the wool, in the chooſing of lambs, becauſe in lambs, the bad qualities of the wool mentioned, are eaſily diſcovered.—It may be proper here to add, that the manufacturer cannot dye equally well, wool that is mixed. If graziers, therefore, attend to keeping of rams, whoſe wool was uniformly white, they would probably advance the price of the fleece at leaſt ſix-pence each.

Many people are of opinion, that the long hairy woolled ſheep, are more hardy, than the ſound fine woolled ones. But I do not ſee upon what that opinion can be founded, as the cloſe ſhort wool, is certainly as good a protection againſt the weather

weather, as the long open hairy wool, which evidently muſt ſhed or open on the back, and conſequently muſt leave the ſheep more expoſed, where it is of peculiar importance he ſhould moſt be protected. Beſides, I have obſerved, that when butchers are brought into a flock, they always firſt handle the cloſe woolled ſheep, as the moſt likely to be the fatteſt.

The Highlanders have only of late, it may be ſaid, taken to the ſheep ſyſtem, their attention formerly being entirely directed to cattle; the ſhape and appearances therefore, that they had been accuſtomed to prefer in cattle, they naturally preferred in ſheep. But the covering of ſheep, deceives much as to the real make of the animal, and coarſe long hairy wool, gives a ſheep of a very indifferent make, the look of ſhortneſs upon the legs, fullneſs of forehand and general compactneſs of carcaſe; but when the animal is clipped, the deception is over, though too late for the Highlander to return his bargain upon the ſouth country ſhepherds, who had the advantage of bargaining with the Highlander, in conſequence of their having dealt in ſheep for ages. However, the ſagacity of the Highlander, will, it is to be preſumed, ſoon lead him to like beſt the cloſe woolled ſheep, becauſe they ſhew their real ſhape, at the time he buys them, and evidently have a more valuable covering.

Diſeaſes to which Sheep are liable..

IN this liſt, the *braxy*, as it is called, claims the firſt attention, as all grazings are more or leſs liable to it, and I have never heard of any cure that ſeems to merit much confidence. Upon opening the ſheep that die of the Braxy, their bladder is commonly, if not uniformly, found to be burſt.

Lambs are the moſt liable to this diſeaſe, and they begin to be affected with it on the approach of winter, and particularly in ſudden cold nights, eſpecially if accompanied with hoar froſt. It would therefore appear, that lambs not yet hardened to the climate, are liable to ſuffer, from its beginning ſeverities, and particularly when theſe ſeverities are in the extreme. How the lambs are thus affected, by a climate in which they are bred, and in which ſo many of the ſame ſort afterwards live and thrive, is an enquiry, that I cannot pretend to enter into; but I venture to ſuggeſt, as preventatives of this diſeaſe, that where convenience offers, lambs in the early part of winter, ſhould be conveyed to lower and more ſheltered grounds, than thoſe on which they were bred, and gradually brought back again, or, if that change of ground cannot be commanded, they ſhould be driven on the appearance of cold autumn nights into fir, or other woods, high broom, or the beſt preſerved graſs, and moſt ſheltered and warmeſt ſpots on the grazing, and that when neither of theſe can be had in perfection, they ſhould be kept in motion all night, or at leaſt the great part of it, and eſpecially in the mornings; that they ſhould be driven pretty ſharply by the dogs, as a ſheep, after being ſo driven, gene-

rally makes water, which muſt tend to prevent a diſeaſe, that terminates in the burſting of the bladder.

By this latter preventative, I propoſe, that the lambs ſhould not be left above two or three hours during the night, at the ſeaſon they begin to be affected, without being forced into motion; but I think, that ſuch motion, ought to be leſs in the beginning of the night, than in the beginning of the morning; becauſe firſt, it would be unſafe in a cold night to allow them to lie down after violent motion, and becauſe ſecondly, the time that they have lain, and the cold they have ſuffered, when lying, muſt be overcome by a pretty violent motion on their being raiſed, beginning the motion gradually, and continuing it till the day-light, leads them to move of themſelves in ſearch of their food.

That this diſeaſe is not a progreſſive one, but almoſt inſtantaneous, from the effects of ſevere cold, upon young ſheep, ſeems to be proved by the well known fact, that they were not liable to it, while it was the practice to houſe them at night, on the beginning of, and during the whole winter.*

The *trembling* is another diſeaſe, that carries off a number of ſheep, and ſeems to originate with the climate, equally with the Braxy. This diſtemper is very fatal, to ſtocks brought from warmer and better gangs or grazing, to colder or worſe ones. Indeed the deaths, in ſuch caſes, are ſo numerous, as to render it imprudent to attempt ſuch violent changes, whatever may be the ſeaſon of the year, at which the change is made. Sometimes, indeed, the flocks bred on the ſpot, are liable to this diſeaſe in cold dry ſprings, when the ſubſtance of the winter forage is waſted, and unable

* The effects of folding, as in England, might be tried. The numbers in the fold, would keep the whole warm, and they might be kept in the fold, till the hoar froſt had gone off the graſs.

ble to ſupply the animal with a food, that gives vigour to s circulation. The cure commonly attempted, is, plung- ig the ſheep affected into cold water; but as this ſtimulus, an only have a temporary effect, and as the animal may gain be expoſed to the ſame piercing cold, and has only e ſame dried up food for its ſuſtenance, little ſucceſs has tended this attempt at a cure. An artificial proviſion of etter ſpring food, will probably be found the only abſolute ure; but the diſeaſe may be much palliated, by bringing the eep to well drained and ſheltered low grounds, where the oung graſs, under the protection of the winter fogs, is com- g up amongſt it, and will therefore be mixed in the ſheeps te of that winter fog.

As the two diſeaſes above mentioned, ſeem to ariſe ſolely om climate, and conſequently to prove, that the ſheep is ot a native, but an imported animal; it is of conſequence o inveſtigate every means that can be uſed, in favour of ſo aluable a ſtock, with a view to avert the miſchievous effects f a cold climate and backward ſprings.

The *Sturdy* falls next to be mentioned, as a diſeaſe to which ſheep are liable. This diſtemper is diſcoverable by an appearance of giddineſs in the animal; it proceeds from a gathering of water between the brain and the ſcull, and the particular ſpot of the diſeaſe, is eaſily diſcovered by the ſoftneſs of the ſcull oppoſite to the gathering of water. The cure practiſed, is by cutting out that ſoft part of the ſcull, and opening the bag that contains the water, and draining it all off; then replacing the piece of the ſcull that was cut out, where it was, and putting pitch upon it, with wool mixed with the pitch, and above, a bandage muſt be faſtened, till the bone either cements or the ſkin grows over it, and keeps it in its place; but as this cure is of ſo difficult a nature, it

is better not to attempt it, if the ſheep affected be fit for any purpoſe when killed.

The *Scab* in ſheep, is the next diſeaſe to be taken notice of, and it is believed to be the principal one that is infectious. The firſt ſymptom is the falling off the wool, but if handled, it may be diſcovered previous to the wool falling off, by the hardneſs of the ſkin, and their feeling as if hide bound. To cure this diſeaſe in a ſcore of ſheep, and ſo in proportion for a greater number, take a pound of tobacco leaves, with as much water as will completely cover them; boil this thoroughly, and ſqueeze the juice out of the tobacco leaves; then mix this decoction, with about ten Scotch pints of chamberlie, and with this bathe each ſcore of ſheep as in laying, only as the liquid thus made up, is thin, the wool muſt be ſhaded, and held up, ſo as to prevent its running off; begin firſt by ſhading the back, then the ſides, and laſtly the belly, by which means, with a little attention to the parts below the legs, every part of the body will be touched with the mixture.

When particular ſpots of the body are much affected, add to the mixture a pound of gunpowder beat fine, and with this rub the parts the moſt affected. Attention muſt be paid in a more eſſential manner to the ſhoulders, to the back of the head, and to the parts about the breaſt bone.

Other recipes may anſwer equally well with this. but as the materials of it are eaſy to be had, it is probably as good as any that can be recommended.

The *Rot* is alſo another diſtemper in ſheep, which falls to be mentioned; but it is little known in the Highlands, and thoſe graziers whoſe lands are liable to it, perfectly un-

derſtand, when to diſpoſe of their ſheep, before it can prove a loſs to them.

From what has been ſaid upon the diſeaſes of ſheep, it would appear, that the ſcab accepted, every animal affected with the diſtempers deſcribed, ought to be killed for uſe, if fit for it, rather than riſk the chance of a cure.

Having finiſhed what I have obſerved of the principal diſeaſes that affect ſheep, it is now, perhaps, neceſſary to mention the local advantages of grazings, diſtant from market. The principal of theſe ariſes, from thoſe lambs which ought to be caſt from the flocks, and out of good ſtocks, which amounts from two to three per ſcore.

When a grazing lies at a great diſtance from market, and is of conſiderable extent, the number of lambs that ought to be caſt, at the time that they are in the beſt order, cannot either be diſpoſed of or uſed; it would therefore be of great importance, if theſe lambs that ſhould be caſt from the breeding ſtock, are healthy and fit to be carried on to maturity of age, that ſpaving of the ewe lambs ſhould be generally introduced.—This practice has in part already taken place, and ſhould be farther extended.

Under the head of local diſadvantages, it is certainly not improper to mention, that fat ſheep, cannot, from diſtant quarters of the country, be profitably driven to market.—There are only two ways of removing this difficulty; the firſt of theſe is, that the diſtant grazings, which on that account muſt be let cheaper, ought to be employed in breeding ſheep to ſell to thoſe graziers that lie nearer the market. The ſecond idea I have, with reſpect to removing this diſadvantage, is, though doubtful, yet I think, in ſome degree practicable. What I would recommend on that head is,

that veſſels, particularly thoſe employed in carrying ſalmon to the London market, ſhould, at the ſeaſon that the taking of ſalmon ceaſes, begin to carry to the ſame markets, fat mutton in carcaſes, from the Highlands of Scotland, which, in the market alluded to, would fetch as great a difference of price, per pound, as the ſalmon does. This idea has been ſuggeſted to me, from the ſalmon fiſhing giving over at the very ſeaſon of the year, when the Highland mutton begins to be in good order; but perhaps, as it has been found profitable to employ ſhips almoſt ſolely for the export of ſalmon, that it might alſo anſwer for mutton, though the ſeaſon in which it is in order, be much ſhorter, becauſe theſe ſhips might be employed in the fiſheries, and other articles of trade, during the remainder of the year. As all exports of freſh meat is precarious, from the uncertainty of ſea-faring operations, it might be proper that curing houſes for mutton hams, were eſtabliſhed, in the northern diſtricts; indeed, in many places, the houſes for curing herrings, might anſwer both purpoſes.

Stocking a ſheep farm with that number which requires one good ſhepherd, ſtating the capital employed, and the average expences and loſſes incurred, I next conſider to be my duty: in attempting which, I am well aware, that it will expoſe me to much cenſure, not only from ſuch proprietors as may have ſcrewed their rents too high, but alſo from ſuch tenants as have cheap bargains; yet as I think a fair ſtatement ought to ſatisfy, and may be of ſervice to both parties, I will venture to give an opinion reſpecting the general ſyſtem of a ſheep ſtock, in the average ſituations of Highland grazings; leaving it to thoſe, who are particularly placed in point of advantages, or diſadvantages, to add, or deduct accordingly.

Graziers in Highland diſtricts, may, as circumſtances dictate, either turn their views to the advantage ariſing from a breeding

a breeding ſtock, where the lambs are the principal object of ſale, or to a rearing ſtock, where the wedders looked up to as the principal ſource of profit. But it may not be here improper to obſerve, that a grazier, in chooſing between theſe ſtocks, ought to prefer the wedder ſyſtem, where the grazing is high, cold, and deſtitute of good ſpring reſources for the ewes, either at, or after lambing time.

In the diſtrict which I have ſurveyed, ſix hundred ſheep, is, in general, conſidered a ſufficient charge, for one ſhepherd. Upon a leſs number, therefore, there muſt always be a loſs of a part of the ſhepherd's time; becauſe, whatever number is kept, there is always great riſk of loſs, if they be not conſtantly attended to. This ſeems therefore to decide, that on a highland grazing, where profit is the object, no leſs a flock than ſix hundred ought to be attempted.

Taking then this number, as the average proper charge of a ſhepherd, if kept as a breeding ſtock, they ought to be divided as follows:

		Total Value.		
14 tups 410 milk ewes	at 14l. the ſcore hence	296	16	0
50 gelt ewes and 126 ewe hogs	at 9s. 6d. each to the ſcore	79	12	4½
600	Total Value	£.376	8	4½

ANNUAL

ANNUAL SALES, &c.

53 ſhot lambs, 50 only payable, at 3s. each	7	10	0
189 lambs, at 5s. each, one to the ſcore	45	0	0
84 old ewes, at 6s. 6d. each, one to the ſcore	26	0	0
21 gelt ewes, at 9s. 6d. each, one to the ſcore	9	10	0
4 aged tups, at 10s. each	2	0	0
	90	0	0
460 white fleeces, at 10d. each	19	3	4
140 laid or ſmeared fleeces, at 10d. each	5	16	8
	£.115	0	0

CHARGES AND EXPENCES.

Call the capital employed in ſtock, for eaſe of calculation, 376l. 10s. This, on account of extraordinary loſs that may happen, and bad payments, ſtate at 37l. 13s. being ten per cent. on the capital employed.

To intereſt of capital, at 10 per cent.	37	13	0
To 8 bolls meal to the ſheperd, at 16s. per boll, 1½ boll of the above allowed for dogs	6	8	0
To laying with butter and tar 168 lambs, and 14 tups, labour included, at 4d. each	3	0	8
Gatherings, clippings, luckpennies, &c.	5	0	0
	£.52	1	8

No allowance is made for the ſhepherd's wages, becauſe, on a grazing, where it is intended to put 600 ſheep, it is ſuppoſed, that the ſhepherd can have the keep of 60 more, in lieu of wages.

Amount

Amount of Sales brought over	115	0	0
Charges and Expences ditto	52	1	8
Remains for Rent	£.62	18	4

This rent amounts to about 2s. ſterling per ſheep, and the wool is valued nearly at the rate of 7s. per ſtone, tron weight, for white wool, and the laid wool at 5s. ditto, 1lb. to the ſtone of each.

WEDDER STOCK.

For the ſake of a practical view of this kind of ſtock, which muſt be the moſt general in the Highlands, I ſhall take my ſtatement, as nearly as I can judge, from a ſtock as actually kept.

To 690 milk ewes, at 14s. each, none to the ſcore	483	0	0
To 25 tups, at 14s. each, none to the ſcore	17	10	0
To 85 gelt ewes, at 9s. 6d. one to the ſcore	38	9	1
To 380 wedder hogs, at 9s. 6d. one to the ſcore	171	18	2
To 340 dinmonds, at 12s. one to the ſcore	194	5	8
To 320 three year olds, at 14s. one to the ſcore	213	6	8
To 160 ewe hogs, at 9s. 6d. one to the ſcore	72	8	1
2000 Stock — Value	£.1190	17	8

ANNUAL SALES.

To 315 three year old wedders, at 14s. one to the ſcore	210	0	0
To 105 old ewes, at 6s. 6d. one to the ſcore	32	10	0
To 21 gelt ewes, at 9s. 6d. one to the ſcore	9	10	0
To 6 aged tups, at 10s. none to the ſcore	3	0	0
To 84 ſhot lambs, at 3s. one to the ſcore	12	0	0
To 84 ewe lambs, at 5s. one to the ſcore	20	0	0
To 1435 white fleeces, at 10d. each	59	15	10
To 565 laid or ſmeared ditto, at 10d. each	23	10	10
	£.370	6	8

CHARGES AND EXPENCES.

Intereſt of 1190l. at 10 per cent.	119	2	0
To 189 wedder lambs, bought in to keep up the ſtock, at 5s. each, one to the ſcore	45	0	0
To 24 bolls meal, at 16s. per boll, to three ſhepherds and dogs	19	4	0
To laying 736 hogs and tups, at 4d. each	12	5	4
To gatherings, clippings, luckpennies, &c.	15	0	0
	210	11	4
Amount of Sales	370	6	8
Expences and Charges deduct	210	11	4
Remains for Rent	£.159	15	4

By this ſtate it appears, that about 20d. per ſheep is a fair rent for ſuch a ſtock.

The prices, in theſe ſtatements, are not made upon the ſales of the year 1793, but upon an average of ſix years preceding, the peculiar circumſtances of that year, have made it be thought proper to leave it out of the queſtion.

POSTSCRIPT.

POSTSCRIPT.

THE following obſervations, on the diſtemper called the *braxy*, in Scotland, ſo fatal to the flocks of that part of the kingdom, merit to be particularly attended to. Lambs are moſt ſubject to this diſorder; it in common makes its firſt appearance with the hoar froſts, at the latter end of the year, and is moſt felt by thoſe, kept in cold and expoſed ſituations; when they are dead, their bladder is either burſt, or is found quite full of urine, and that of a very ſtrong ſmell. This diſorder, moſt probably, proceeds from the following cauſe: Sheep, when left to follow their own natural habits, retire to reſt early at night, nor do they riſe to feed till day-light. At the ſeaſon of the year abovementioned, the ſheep, and more eſpecially the lambs, not liking to feed on the graſs, till the ſun has taken off the froſt, remain longer in their layers than in common; during which time, ſo large a quantity of urine is collected in the bladder, that it cauſes a ſuppreſſion, and the ſheep is not able to ſtale. All animals breed more urine in cold froſty weather, than in mild; in conſequence of their perſpiring leſs, and of courſe, if in health, ſtale more frequently. The following may be found of uſe in the above diſorder: Nitre pounded ſmall, ſixty grains (or a tea ſpoonful) liquid laudanum, twenty drops, to be given in a tea cup full of water, and to be put down the throat of the lamb with a ſpoon.—Or, two table ſpoons full of caſtor oil, with twenty drops of liquid laudanum.—Or ſixty grains of nitre, with twenty drops of laudanum, in a tea cup of cold water, may be found to anſwer; if they do not operate,

and produce the deſired effect, in an hour, the doſe muſt be repeated.—Or, a little Hollands gin may be of ſervice, with twenty drops of laudanum, remembering, after the medicine is given, the ſheep ought to be drove about gently, and ſuffered to ſtop at times, that it may have an opportunity to ſtale; and by being drove about gently, it will cauſe the medicine to operate the ſooner, as no time is to be loſt; they are not to be made to run, as the weight of water in the bladder, would increaſe the inflammation; this diſorder may certainly, in a great meaſure, be prevented, by bringing the lambs, at the latter end of the year, into warm incloſed grounds; and if the owner of the lambs, has not an incloſure, the ſhepherd ought to be amongſt them, very early in the morning, with his dogs, to make them quit their layers, that they may ſtale.

Houſe lambs, brought to the London markets, with their legs tied, are ſubject to a diſorder like the Braxy, *their bladders being full of urine*, as they will not ſtale with their legs tied; the butchers, after they have brought them home, give them a little clean, ſweet, oat ſtraw, which they like to pick amongſt, and with it a pail or two of clean water; when they find themſelves at liberty, and have the ſtraw under them, they moſt probably ſtale, and are well of courſe; but an experienced butcher looks at them, after they have been in his cellar, or yard, an hour or two, and at night before he goes to bed; if at any of thoſe times, he finds a lamb to be ill from the above diſorder, which he knows by its hanging down its head, drooping its ears, grinding of the teeth, ſetting up the back &c. he kills it, and finds the bladder ready to burſt with urine; and if it has been ſuffered to remain long ill, the ſweetbread will be found much ſhrunk, and waſted from

In deſperate caſes, the ſhepherd might cut the ſkin of the belly over the bladder, then open a ſmall orifice in the bladder, with a knife, or other inſtrument, to let the water out, and afterwards ſew up the ſkin of the belly as in ſpaying animals, and cover it with a pitch plaiſter; the bladder will heal of its own accord. Whilſt the operation is performing, the lamb is to be held up by the hind legs, till the water is diſcharged, and laid on the back till the ſkin is ſewed up.

For the *Black Water*, the following remedy is recommended: Cut two or three joints off the tail, let it bleed a little, then cover the part with a ſalve made of freſh butter, ſalt, and rue, well beat together, and ſewed with a rag, over the end of the tail to the wool, ſo as to keep out the air.

In regard to the cure above recommended, it ought to be principally uſed as a preventative, about a month before that diſorder in common makes its appearance, which, in moſt places, is about the fall of the leaf.

APPENDIX.

APPENDIX.

No I.

OBSERVATIONS

By Mr. CAMERON, *of Faſsfairn, near Fort William, reſpecting th in his neighbourhood.*

THE ſoil is in part, light and ſandy, and in other parts a deep clay. The climat The farms are in general large, in ſome places occupied by one tenant, and in ot ber.—They are principally in paſture, and have very little cultivated graſs of any ſheep ſtock, and the preſent breed of black faced ſheep, is ſuppoſed to be the fitteſt fo Watering is an improvement that has not been tried, nor is there any conſiderable t fit for it.—The only grains cultivated are barley and oats. All kinds of green crop anſwer.—Fallowing is not practiſed.

The manure upon the ſea coaſt, are ſhell ſand and ſea ware, in the inland parts of moſs, fearns, horſe and cow dung.—The uſeful implements are the common plo horſes, one horſe carts and ſledges.

As to ſeed harveſt, oats are ſowed the end of March and beginning of April, a in May; harveſt barley upon the ſea coaſt, about the middle of Auguſt; oats and the middle of September, (inland later.)

The farms are moſtly in open fields: the few perſons that have incloſed, have fo vantages from it.—The incloſures are ſtone, or ſeal dykes; the expence of ſtone d three to ten ſhillings a rood, the height from three foot and a half to five foot; the ſhilling a rood, and in general five foot high, the ſize of the incloſures depending ation of the ground: They are ſo few that they have no effect upon population in t

Wages to a ploughman by the year from five pounds to ſeven pounds.—Price of la ling per day; the hours of labour in ſummer and harveſt are from ſix in the morni night; there are few employed at day wages in this country at any other ſeaſon of t

Very little attention is paid to draining of any kind, nor is paring and burning pr

e country in general is not well wooded; but on part of the eſtate of Lochiel, in this ne
ood, there is a natural fir wood, of twelve computed miles long, and ſome young plantati
lſo ſome natural oak woods; young woods are preſerved from ſeven to nine years from
of cattle.

e price of proviſions in this country is very uncertain, and depends entirely upon the no
outh country markets.

e military roads in this country are kept in great repair, and much improved by Col
gomery. The parochial roads are now in a way of being made good by an Act of Parlian
obtained for this county.—The farm-houſes in general bad and ill conſtructed.—The le
neral from ſeven to nineteen years; long leaſes and a better ſyſtem in building and incloſ
are ſuppoſed to be the principal improvements for this country, are found to be the moſt
geous.

ere is very little commerce and no manufactures in this diſtrict. There are no Societies
ed in the county for the improvement of Agriculture, and the turn of the people for
ment is not great; but there are none readier to follow a good example; and the premi
ly granted by the board of Truſtees for the beſt turnips, are found greatly to improve
ſtocks of this diſtrict.—Short leaſes and a rainy climate, are the obſtacles to improvemen

No. II.

OBSERVATIONS

Mr. M'Donald, *of Achtrichtan, reſpecting the ſtate of Huſbandry in neighbourhood of Glenco, in Argyleſhire.*

.R. M'Donald having a farm of upwards of thirty miles long, and three or four miles bro
ariety of ſoils, which is ſuppoſed to anſwer a ſheep ſtock, better than if it were all of one k
r. M'Donald has the moſt of this farm under a ſheep ſtock, of the black faced or Linton bre
es not wiſh to have any mixed breed in his flock, unleſs he could get tups of a ſuperior q
o his own, of the real Linton breed, as the wool is only a ſecondary object, though at
time, Mr. M'Donald's wool, is allowed by the Engliſh manufacturers, who buy it from h
at leaſt equal to any other ſtock in the Highlands, in point of quality.

r ſome years back, his wedders have been bought by Yorkſhire graziers, who acknowl
o be excellent feeders, and recommend it to Mr. M'Donald, not to mix his breed of ſl

with *either* the Cheviot, or any foreign breed.—Mr. M'Donald is fully reſolved to try of a number of his ewe lambs, and year olds next ſeaſon, and has applied to ſome of in Yorkſhire and Cumberland, to get a proper perſon to come from either of thoſe co the experiment, as he is certain it will anſwer; unleſs there may be conſiderable loſſes and as Mr. M'Donald has obſerved an advertiſement in the newſpapers, by order of land Society, wherein they promiſe certain premiums to the ſtock maſters that have number of ſpay'd lambs, or year olds.—Mr. M'Donald is to apply to that honorable S formation with regard to ſpaying of young ſheep.—Mr. M'Donald keeps about twenty n his farm, ten of which he keeps in his own family, the other ten he gives to his princip for which the ſhepherd paps fifty pounds ſterling, and rears two calves to his maſt calves are alſo ſold for the maſter's behoof.

Mr. M'Donald is perſuaded from experience, that the improvement of hay groun great advantage to all farmers, who wiſh to make ample returns from the dairy, and from trial, ſhelly ſand to be the beſt and cheapeſt manure for encouraging hay, th yet found out in this country; as the ground will produce generally, four or five tim than the ground produced before the ſhelly ſand was laid on, this manure cannot be any, but thoſe that live on, or near the coaſt; this ſand is carried from Clan Ranald this coaſt, for about three ſhillings and ſix-pence per ton. As Mr. M'Donald finds th this country won't anſwer corn crops with the inceſſant rains that are generally in this has almoſt entirely ſet his mind to the raiſing of potatoes, the beſt manure for which, be a compoſed dunghill, made uſe of on a dry ſoil.

No. III.

OBSERVATIONS

On the Huſbandry around Campbelton, Kintyre, by Mr. LONGL

THE nature of the ſoils is a ſandy and light loam, and ſome thin clay. Th wet and cold.—The farms are in general ſmall, occupied in both tillage and graſs.—T employed both in huſbandry and paſture.—The graſſes that are cultivated are natural. of ſtock are cows, horſes, and ſheep; the preſent breed might be improved by k

hich are much wanted in the country. New breeds ought to be tried with caution. N
nd is watered, but part is capable of that improvement.

crops principally cultivated, are barley, oats, potatoes and beans.—The rotation
, barley, oats, and then paſture without ſowing any ſeed. No green crops uſed,
tle clover, and is found to anſwer well; there is no doubt of our raiſing turnips if
ſave them from the deſtruction of people; but without the country in general would h
ere would be no poſſibility of keeping them.—There is little or no fallowing uſed,
n practice is found to anſwer well.

res uſed are dung, lime and ſhell ſand.—Little or no attention is paid to making of dunghi
Scotch plough is uſed in general, a bad ſort of carts and other utenſils, which is m
the country. Horſes are made uſe of in general for the plough.

ſual ſeed time is from March till May.—Harveſt is from Auguſt till October.—The l
cloſed, but chiefly in open fields.—A great advantage has been found by the incloſing
tting better crops, and improving the ſtock much by the cattle going at their eaſe.—T
e incloſures is from five to twenty-five acres; part with ſtone, part double feal dyke,
d hedge planted.—The incloſures increaſe population.

ate of wages is from three pounds ten to four pounds per half year. Daily wage
-pence to ſixteen-pence per day: the hours they work in ſummer are from ſix o'clock in
till ſix in the evening; in winter they work as long as they can ſee.

rains made uſe of in fenny parts are open, and are found to anſwer well; in other grou
ered drains.—Paring is little practiſed, but what is done is found to anſwer well.

price of meal is from two ſhillings to two and three-pence per ſtone Dutch, and is lik
for the fleſh proviſions is from three ſhillings to three and four-pence per ſtone Engli
likely to have a great fall.

public roads are very good over all the country; the bye roads are but indifferent.—T
ouſes are in general well ſituated of late.

leaſes commonly granted are for nineteen years; the long leaſes are found to be the b
nts for both landlord and tenant, they encourage the tenant to carry on the improvements
her degree.

ere has been no manufacture carried on in this diſtrict, only a bleach field, that has been e
d within theſe three years, and is found to be of great uſe to the country by keeping mo
place that uſed to go to Ireland for bleaching cloths; it lies two Engliſh miles to the w
of Campbelton.

ere are a number of tenants who have a turn for improving; but there is no encouragen
them for ſo doing, their leaſes are ſo ſhort, and no premiums for green crops, &c.

No. IV.

OBSERVATIONS

By HUMPHREY GRAHAM, Esq. *reſpecting the Huſbandry in the of Inveraray.*

THE ſoil in the low grounds, is in general a deep light loam; in the higher leſs gravelly.—Moſt of the hills are green to their tops; there are ſeveral tracts covered with heath, interſperſed with ſpots of rocky paſture.—It is alledged, tha here than in moſt parts of the weſt of Scotland. The harveſt months are the m

The farms are in general let to ſmall tenants; that is, ſeveral families occupy the paſture in common, and poſſeſſing the arable in the run rig manner, which, h be at an end on the Duke of Argyll's lands, as a ſeparate lot is already marked ou

Lands are chiefly in paſture; a very ſmall proportion in tillage.—No graſs tenants.—Sheep and black cattle are the ſtocks kept, both of which are improvi Highland breed of cattle, and the black faced ſheep, are reckoned the beſt for th

The grain cultivated are oats, and a ſmall quantity of barley.—Coarſe potatoe green crops.—The outfield, two crops of oats, and then lay for two or three not practiſed.

Manures.—The produce of the Stable and Byre, or cow-houſe; very ſeldom attention paid to the making of dunghills.

The tenants make their own ploughs and harrows, both in an awkward bad m ants uſe their own ſmall breed of horſes.

Seed time.—The month of April for oats; May for barley and potatoes; Se tober for harveſt.—In a few farms a field or two may be incloſed for the purpoſe of natural graſs for hay; the produce varies according to circumſtances.—It is dred ſtone, (24lb. Averdupois to the ſtone) from the acre; the produce great eloſures. If the incloſures are made by the landlord, an intereſt of from ſix to cent. upon the outlay is commonly charged, as incloſing both improves the qual creaſes the quantity of graſs, it conſequently leads to an improvement of the ſt the tenant to feed his cattle better through the winter and ſpring. The few inc five to ten acres each. There are ſome incloſed by ſtone dykes, which coſt from f per fall, the height from four to five feet. Incloſing has had no effect one population.

ce of labour from ſixteen-pence, in ſummer, to one ſhilling, in winter, per day. Piece-
the labourer nearly the ſame, as the proper rates are now pretty well underſtood.—In ſp
er, and harveſt, they work from ſix to ſix, two hours being allowed for breakfaſt and di
er they work while there is day-light, with one hour for breakfaſt or dinner.
ining not practiſed.—No paring and burning.—A great deal of wood properly incloſed
oked after: it is moſtly cut for charcoal by a Lancaſhire iron furnace Company.
t out of it generally from ſix to eight years after cutting.
rifiens as high as in any part of Scotland, except fiſh, which are here in plenty and c
oads are well made and kept in good order.
ber being plenty in this neighbourhood, the farm houſes are in ſome reſpects more
s than in many other parts of the Highlands, but they are badly conſtructed, and in ge
ed. Leaſes granted for nineteen years.
merce and manufactures within this diſtrict have had no effect on its agriculture; the
ture is one of coarſe woollens and carpeting. No practices that would be of ſervi
ountries.—No Societies of Agriculture eſtabliſhed.
people do not ſeem to have any particular turn for improvement; aboliſhing run rigg
may poſſibly excite it.—Reſtraining the number of their cattle within proper limits an
a ſufficient ſupply of winter provender, appear the only meaſures requiſite, beſides
practiſed for improving their ſtock; for this end it might be adviſable to cultivate tu
never ſuffer from the fly in this climate; but incloſures muſt firſt be made, and the
uſt be general, otherwiſe they cannot be preſerved.
e preceding obſervations relate only to the farms in the poſſeſſion of tenants; the very
rm in the Duke of Argyll's own hands, is managed in a very different manner; eve
ent in the implements of huſbandry and modes of culture are tried, and purſued or re
y are found to anſwer or the contrary. Crops of different ſorts are raiſed; fallowing i
; alſo paring and burning; oxen are uſed, and every thing done with a view of imp
ock, and bringing this part of the country to as perfect a ſtate as the ſoil and clima
t of; theſe obſervations are carried on under the direction of the Duke himſelf, with
ſeers to ſuperintend every department. It is allowed that the Duke's breed of Highland
the beſt in Scotland. Of this kind his Grace keeps ſixty cows, and the whole black ca
rent kinds and ages in the Duke's farm at Inveraray, amount to upwards of ſix hundrea

FINIS.

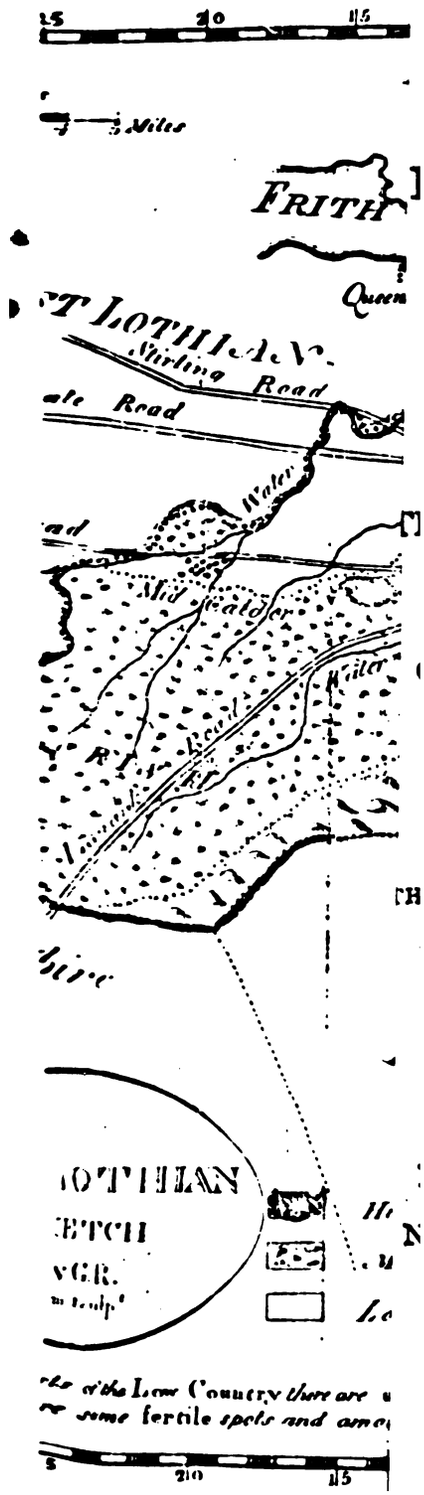
GENERAL VIEW

OF THE

AGRICULTU

OF THE COUNTY OF

MID LOTHI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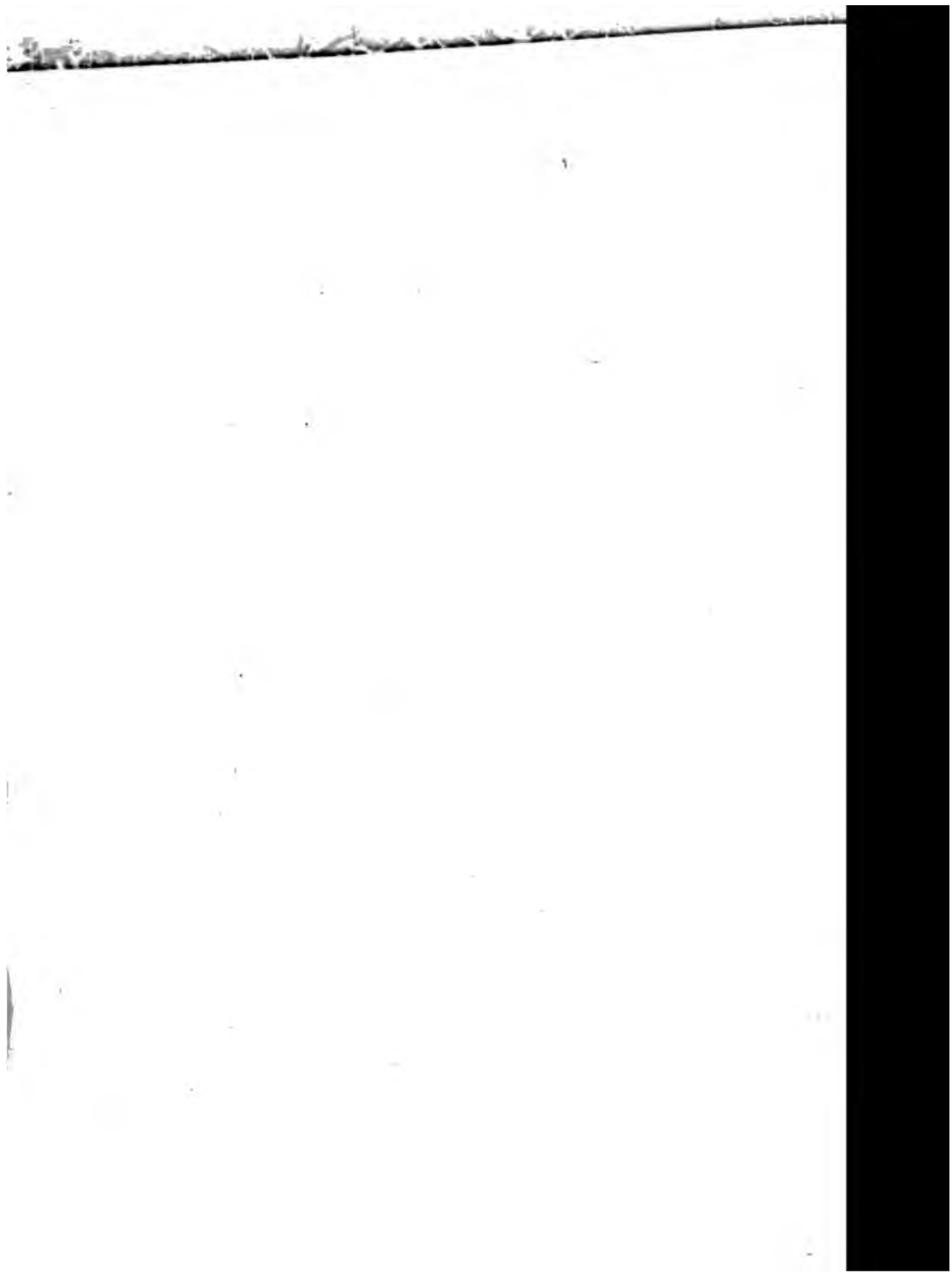
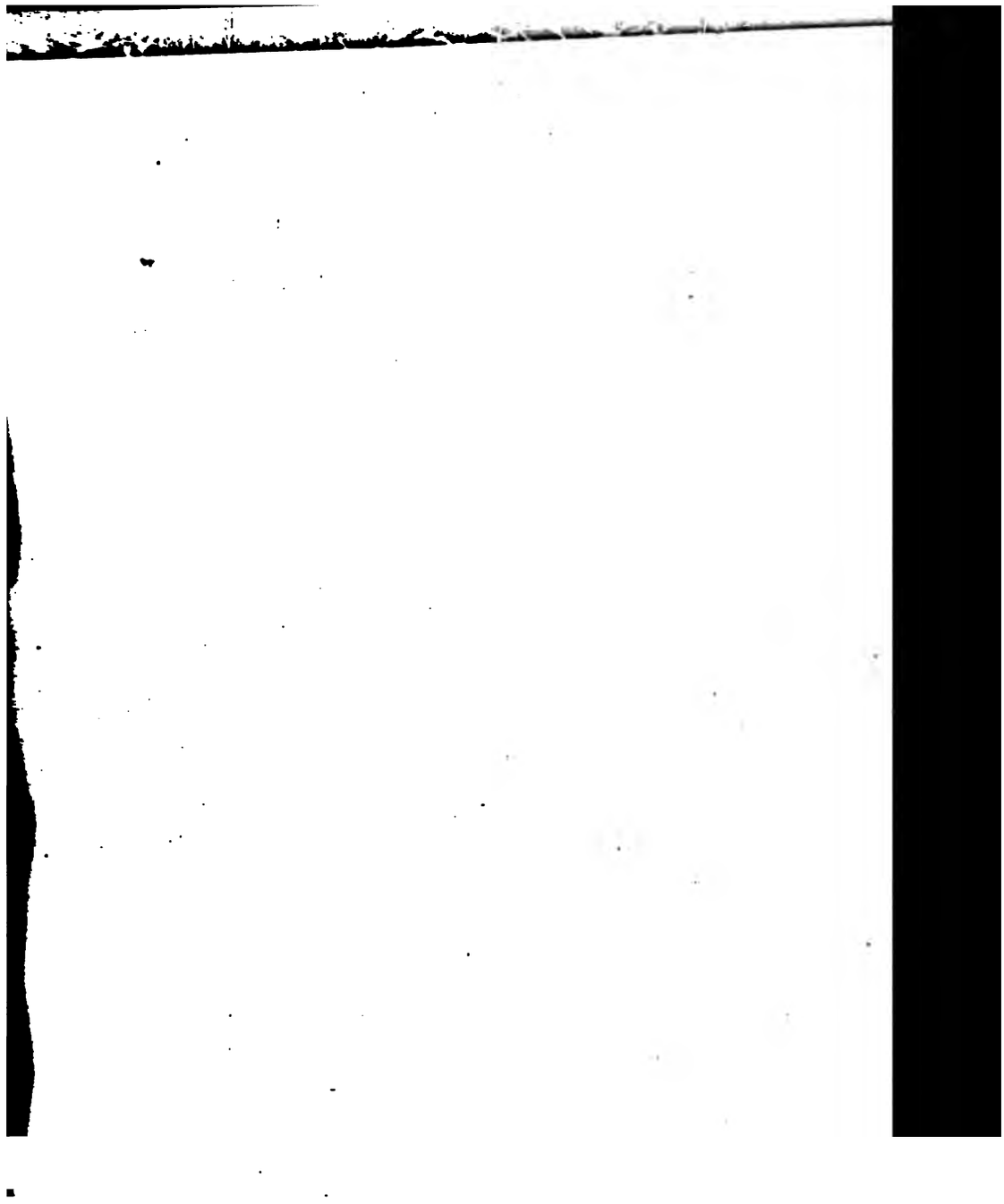


ADVERTISEMENT.

THE following valuable communication, respecting the preser
ate of huſbandry in the county of Mid Lothian, and the means c
s improvement, drawn up for the consideration of the Board of A
riculture, is now printed, merely for the purpose of its being cir
ulated there, in order that every person, interested in the welfare of tha
unty, may have it in his power to examine it fully before it is publiſhed
is therefore requested, that any remark, or additional observation
hich may occur to the reader, on the perusal of the following ſheet
ay be transmitted to the Board of Agriculture, at its office in Lon
on, by whom the same ſhall be properly attended to; and, whe
e returns are completed, an account will be drawn up of the stat
agriculture in Mid Lothian, from the information thus accu
ulated, which, it is believed, will be found greatly superior, to a
thing of the kind, ever yet made public.

The board will probably follow the same plan, in regard to all th
her counties in the united kingdom; and, it is hardly neceſsary t
ld, will be happy to give every aſsistance in its power, to any perso
ho may be desirous of improving his breed of cattle, ſheep, &c
of trying any useful experiment in huſbandry.



INTRODUCT

THE COUNTY OF EDINBURGH, or MID LOTHIAN, is situated between 55° 39, aud 55° 59, degrees of N. latitude, and between 2° 36, and 3° 33, degrees of lon. W. of Greenwich. It extends along the south ſhore of the frith of Forth, its northern boundary, for about 12 miles from E. to W. but expanding gradually as it ſtretches ſouthward, its ſouthern line, ſkirting the counties of Selkirk, Peebles, and Lanark, is about 36 miles, ſo that the mean length of this county, from E. to W. may be about 24 miles; and as its mean breadth from N. to S. may be about 15 miles, the extent altogether may amount to about 360 ſquare miles; that is 230,400 Engliſh acres, or 183,240 Scotch acres,* the common meaſure uſed in this county. Of this, one third part may be eſtimated as the proportion of hill, or grounds inacceſsible to the plough; and two thirds, or about 120,000 Scotch acres, in tillage, in paſture, or in wood.

Hills. The hills may be arranged under two principal diviſions, the Morefoot hills, and the Pentland hills. There are indeed ſeveral others altogether unconnected with them, and with one another, but which are inconſiderable, either with reſpect to their height or their extent.

The Morefoot hills, in the S. E. corner of the county, form a mountainous diſtrict of about 50 ſquare miles. They are the moſt elevated in Mid Lothian, being from 1400 to 1850 feet in height above the level of the ſea. There are ſeveral dales or valleys interſperſed among them, conſiſting of very good arable land; a great many even of the hills themſelves have been in cultiva-

* The Engliſh acre contains 4840 ſquare yards of 36 inches each, and the Scotch acre 5760 ſquare yards of 37 inches each; hence the proportion between the Scotch and Engliſh acre is very nearly as 5 to 4.

tion,

tion, and very fine crops of oats are still produced a great way up their sides, which in good seasons come to tolerable perfection. The pasture on the whole is in general found to be sweet and healthy, which has made them to have been long esteemed as fine sheep-walks, and the stock bred there, accounted superior to the most part of hill-fed sheep in this country. This whole hilly district is generally denominated Gala Water, from the name of the principal stream.

The Pentland hills are situated nearer the middle of the county, approaching within six miles of the sea, and about 4 miles from Edinburgh, the capital. They do not occupy so great an extent as the hills of Morefoot, not exceeding 40 square miles; neither are they so much elevated, the highest not exceeding 1600 feet; yet, from their local situation, adjoining to a flatter country, they have a more formidable appearance; and from their bleak and barren aspect, are naturally more gloomy and unpleasant.

Low country. The low part of the county is exceedingly diversified in its appearance and quality. The most level part of the lands, as wellas the richest soil, is however generally to be met with on the northern side next to the sea, where there is a stretch of about 15 or 16 miles from E. to W. and of 6 or 8 in breadth from N. to S. containing a tract of upwards of 50,000 Scotch acres of arable and fertile lands, in which are interspersed several small hills, Arthur's seat, Blackford hills, Craiglockhart, &c, which add to the natural beauty of the country, without much diminishing its value; as they yield a considerable rent from the fine pasture with which they in general abound. Farther up the country, and nearer to the hills, there is a still greater extent of plain country; which, being not only much higher situated, (from 600 to 900 feet above the level of the sea,) but also having in general a great northern exposure, it

becomes very unfriendly to vegetation, although the natural qualities of the soil are far from being defective; yet even here, in situations that are well ſheltered by plantations, or which have a southern aspect, there are many fertile and rich spots, even to the very verge of the hills. There are however in this upland district, many extensive tracts of moor and moſs, that have never yet been under cultivation; and perhaps never ſhall.

Rivers or waters. The ſtreams of this county are all inconſiderable. The term *river* is never applied; the greater being called *waters*, the leſſer, *burns*. The principal waters are the following: Almond water, which forms chiefly the weſt boundary of the ſhire, between this county and West Lothian, is not very large; yet as it flows for a conſiderable way through a flat rich country, it is very apt, in *ſpeats* or land floods, to overtop its banks, by which great damage is done to the adjoining lands, the crops of which are hence frequently swept to the ſea. The water of Leith is of ſtill leſs magnitude. Its whole courſe does not exceed 15 miles, flowing in a deeper channel than the former; and for the greater part, its banks are finely fringed with wood. It has all the way a conſiderable deſcent, ſo as to ſerve for the turning of mills, of which there are a great many of different kinds erected upon it. The Eſk is the moſt conſiderable water in the county, and alſo the moſt beautiful. It is formed of two others of the ſame name, the north Eſk and the ſouth Eſk; the former riſing from the Pentland hills, the latter from thoſe of Morefoot. Both of theſe, after flowing ſeparately for 12 or 15 miles, unite together under the common name of Eſk, near Dalkeith, about 5 miles from their influx to the ſea at Muſſelburgh. During almoſt their whole courſe, both before and after their junction, they glide in a deeply indented

channel, worn out of the solid rock, delightfully ſhaded with wood. The north Eſk in particular is remarkable for the romantick beauty of its banks, as it flows by Roslin, Hawthornden, Laſswade, Melville, and Dalkeith.

These are the chief rivers which flow to the north. The Tyne, which takes an eastern direction through East Lothian, riſes in this county, in which it continues for 5 or 6 miles of its course, beautifully ornamented with wood.

The Gala, augmented by the Herriot and the Luggate, is the only rivulet which runs to the south. It riſes in the northern limb of the Morefoot hills, and after a course of about 15 miles, falls into the Tweed below Galaſhiels. About 10 miles of its course are in the county of Edinburgh. This is a beautiful meandering ſtream, with hardly a ſingle ſhrub to ornament its banks; it is nevertheleſs exceedingly pleaſant to see it rolling its pure limpid waters through a narrow dale, hemmed in on every ſide by hills diſtinguiſhed for their verdure.

Such are the principal rivulets, which not only diverſify and ornament the face of the country, but serve alſo, by the conſiderable fall which they in general have, to turn the machinery of the various mills erected upon them; in which view they are of much importance to the agriculture of the county. With reſpect to navigation, they are of no moment whatever; as hardly in any of them, is it practicable to employ even the ſmalleſt boat. In the Gala and in the Eſks, there may be conſiderable numbers of trout; but very few of theſe, or of any other fiſh, are to be found in the other rivulets. Of Salmon, ſo plentiful in the Scotch rivers in general, there are perhaps not an hundred caught in all the waters of this county in one ſeaſon.

Almoſt the whole of this county can be ſeen at once from the ſummit of Allermore, the moſt elevated of the Pentland hills to the north. Its waters may be traced by

the fringe of wood with which their banks are generally ornamented. The numberleſs villas in the vicinity of Edinburgh, and gentlemen's seats, all over the county, are seen beautiful and distinct, each in the midst of its own plantations. These add still more to the embelliſhment of the scene from the manner in which they are disposed; not in extended and thick plantations, which turn a country into a forest, and throw a gloom upon the prospect, but in clear and diverſified lines, in clumps, in hedge rows, or waving in clouds on the brows of hills and elevated situations; useful as well as ornamental; protecting, not injuring, cultivation. In fact, Mid Lothian, when viewed on a fine summer day, from almost any of its hills, displays a prospect of as many natural beauties, without being deficient in those embelliſhments which arise from industry and cultivation, as perhaps can be met with in any tract of the same extent in Great Britain. The expanse of the Forth, which forms the northern boundary, and which is here from 6 to 10 miles in breadth, adds highly to the natural beauty of the scene; and the capital, situated upon an eminence adjoining to an extensive plain, rises grand to the view, and gives a dignity to the whole.

Surface. Descending from the hills to the low country, the surface which had the appearance of an uniform plain, undergoes a remarkable change to the eye. The fields are laid out in various directions, according to the natural figure of the ground, which is unequal, irregular, and inclined to every point of the compaſs. The most part however of the land lies upon a gentle slope, either to the N. or the S. in banks which are extended from W. to E. all over the county. This inequality in the surface contributes much to the ornament of the country, by the agreeable relief which the eye ever meets with in the change of objects, while the universal declivity which prevails more or leſs in every field, is favourable to

the culture of the lands, by allowing a ready descent to the water which falls from the Heavens.

Soil. The soil is as much diversified as the surface. It is not easy to determine which is most prevalent, clay, sand, loam, or gravel, as they are all to be seen in the same farm, and frequently in the same field, with many variations of quality, which is likely to be more and more increased by the effects of cultivation and manure, till perhaps in the end, the whole may be reduced in no small degree to loam. One remarkable circumstance may be observed here in the soil, though by no means peculiar to this county, that the lands hanging to the north, are almost always the most fertile, producing better crops than those which have a southern exposure.

Climate. This county lying nearly as far north as lat. 56°, might well be supposed to be naturally cold. Nevertheless, the climate on the whole is far from being unfriendly to vegetation. Excessive cold and extreme heat are alike unknown.

It is the inconstancy rather than the severity of the seasons which the husbandman has to guard against: indeed so variable is the weather in general, that hardly a single week is of the same uniform tenor; and very frequently the same day is known to display a vicissitude of temperature of the most opposite tendency and effect. There is however a general state of weather that takes place according to the different seasons of the year. Snow seldom falls upon the low part of the county before the first of December, and is rarely later than Christmas. The time of its continuance is however very uncertain; in some years it lies 10 weeks, and in others not three days. Three weeks is reckoned a moderate length for the *storm* to last, the name by which a great fall of snow is denominated. In January and February, the weather is exceedingly uncertain; sometimes, as in the last three years, calm, clear, fine growing weather,

ther, but more generally hard frost and snow. In March and April, cold frosty mornings succeeded by warm sunſhine, through the day, is the general state of the weather, by which the wheat fields very frequently ſuffer. In May, cold piercing east winds fequently prevail, often attended with heavy deluges of rain, particularly unfavourable to the grounds at that time, which being either under immediate tillage, or but recently ploughed, are liable to much injury from ſuch ſuperabundant moiſture. June, though enjoying the longeſt days of the year, is often remarked for the chill cold of its mornings, which, being ſuch a contraſt to the noon-tide heat which ſucceeds, has the effect to nip and blaſt the yet young and tender ſhoots of corn unable to withſtand ſuch contrariety of weather. July and Auguſt are the warmeſt months, and would be exceedingly pleaſant, were it not that the fine weather is ſo frequently interrupted by the thunder ſhowers which are prevalent at that ſeaſon. In September the weather appears to run into extremes; in ſome years there is hardly a ſhower through the whole month, and in others it has been rainy almoſt every day. October, November, and December, are in general pretty ſimilar to one another; heavy rains with intervals of calm moderate weather ſucceed in rotation.

The following tables will ſhow in a more explicit manner the ſtate of the climate of Mid Lothian, as well with regard to the proportion of fair and rainy weather, as to the reſpective degrees of heat and cold which prevail in the different months of the year. They are taken from obſervations made in eight ſucceſſive years, from 1785, to 1792, inclusive, in the immediate vicinity of Edinburgh; and from that circumſtance muſt be held as ſtating the climate ſomewhat more favourable than it is, in the greater part of the county, the higher grounds in particular being not only ſome degrees colder, but alſo expoſed to a greater *quantum* of rain.

TABLE

TABLE I.

The quantity of rain.

	1	2	3	4	5	6
January,	13.75	..589	24	3	2..5	0..1
February,	6.625	.58	28	8	2.31	0.88
March,	13.5	1.2475	2.	7	2.39	0.37
April,	14	1.544	.0	3	2.89	0.44
May,	14	1.963	19	6	4.73	0.5
June,	13	2.24	20	4	4.76	0.15
July,	16	2.43	21	10	4.79	0.17
August,	14.25	2.375	21	9	3.31	1.17
September,	14.25	3.11	21	5	10 72	0 6
October,	15.12	2 46	21	7	4.33	0.41
November,	13	2.61	20	9	5.23	0.58
December,	17.5	2.84	21	14	8 42	1.11

In this table opposite to each month, respectively, Column 1. ſhews the number of rainy days on an average of eight years. Col. 2 the average quantity of rain in inches deep. Col. 3. the greatest number of rainy days that took place monthly in eight years. Col. 4. the least ditto. Col. 5. the greateſt quantity of rain in inches deep. Col. 6. the leaſt ditto

The greatest number of rainy days in any of the 8 years above, was in 1789, the number being 222, producing however only 23.92 inches deep of water. The greatest quantity of rain was in 1792, being 36.8 inches, though there were only 185 days of rain. The least quantity of rain that fell in any of these eight years was in 1786, when there were only 9.62 inches ; and also the smallest number of rainy days, which was only 136.*

* In rainy days are not included, fog, mist, or such small rains as cannot be easily measured, but which are very frequent in this country so that the climate is still more humid than from the above table would appear.

TABLE II.

Heat and cold.

	1	2	3	4
January -	37	34·5	51	11
February, -	42	37	59	20
March, -	42·5	33·5	59	14
April, -	50	39	77	29
May, -	57	48	73	32
June, -	60·5	50·5	89	40
July, -	64	53	83	45
August, -	65	53·5	81	43
September, -	60	50	77	34
October, -	52	45	65	21
November, -	45	39	61	20
December, -	39	35	53	14

The above table refers to the observations made from a thermometer in which the freezing point is fixed at 32°, and blood heat at 96°. Col. 1 opposite to each respective month, shows the degree of heat at noon. Col. 2 the degree of cold at sunrising at an avervge of 8 years, from 1785 to 1792 inclusive. Col. 3 the highest degree the thermometer has attained to, and col. 4 the lowest point to which it has fallen during the said period.

The climate may be still farther judged of from the date of the common occurrences in husbandry. Spring corns, as oats, beans, and pease, are generally sown from the middle of Febuary to the middle of April, barley during the whole month of May. The hay harvest is in July, and corn harvest from the 20th of August to the middle of October. The wheat seed time is commonly during the months of October and November, though sometimes, when on summer-fallow, as early as the 1st of September, and in other instances as late as Christmas, with very good success.

Towns and population. EDINBURGH, the capital of Scotland, as well as of Mid Lothian, is a city of considerable magnitude, occupying an extent of above two square miles. The importance of this town to the agriculture

al

in its neighbourhood, may be judged of from its population; the number of inhabitants being supposed to amount to about 70,000. Its markets and other circumstances affecting agriculture will be taken notice of afterward.

LEITH, which was formerly a mile and an half distant from Edinburgh, but is now in a fair way of being joined to it, by the buildings which are rapidly erecting between them, is the second town of importance in this county. As it contains about 14,000 inhabitants, it is also of much benefit to the agriculture of the county.

DALKEITH is a clean handsome town situated between the two Esks near their junction, about 6 miles S. E. of Edinburgh. It may contain about 4000 inhabitants.

MUSSELBURGH, FISHER ROW and INVERESK, lye contiguous to one another, at the influx of the Esk into the sea, about 5 miles E from Edinburgh.—The number of inhabitants may amount to about 4000.

These are the chief towns in Mid Lothian, but there are a great many villages that may contain from 200 to 800 inhabitants, each, so that the population of the county is very considerable. I am inclined to believe, that the number of people in all, will be found to be little short of 130,000, which is equal to 1-13th of what Scotland is supposed to contain altogether, and is probably more in proportion to the number of acres than any other county in Great Britain except Middlesex.

YEARLY VALUE, AND MANAGEMENT OF ESTATES.

For remarks and additiona observations.

THERE is almost no landed estate in this county worth ooo l. a-year; few amount to 2000 l. and many are not ove 1500 l. Neither is there much of the lands par- lled out into small properties, the poſſeſsions in general ing from 500l. to 1000l. of annual rent; hence the gen- y are nearly on a level with one another, forming that luable and respectable claſs, whose easy and unincum- red circumstances enable them to promote the solid in- rests of their country, to which they in general pay a ery laudable attention.

As the greater part of the proprietors of this county ei- ier are, or have been, in the army, the navy, or employed the numerous and respectable departments of the law, the various offices of the revenue, in banking, or in ommerce, there are but few of them who have leisure to pply to agriculture; therefore the lands are commonly t to huſbandmen who farm them on leases. This is the ase with perhaps eight ninths of the whole; the only rounds retained by the proprietor being, in general, a ew small inclosures around the mansion-house, common- y kept in pasture; or, in some cases, a few acres in til- ge, for his amusement in making experiments in hus-

bandry. Even the house and gardens are frequently let in lease, the owner finding himself accommodated in some other place, more suitably to his taste or circumstances.

The connexion between landlords and tenants subsists here, for the most part, on an amicable footing. The former pay a due attention to the interests of the latter, act towards them in a friendly manner, and exact their rights with lenity and moderation; whilst the tenants retain and cherish a respect for the *lord of the manor*, which is seldom violated, but in cases, where they are used with harshness or severity; which does indeed sometimes happen, although it is generally, in such cases, not easy to decide which of the parties is most in the wrong.

Length of Leases, &c The most common length is nineteen years, which, in a cultivated country, seems to be a very reasonable period for all parties, but was formerly twice, and sometimes thrice. that extent. There are, however, many deviations from this rule. When lands have been long in pasture, and are again brought into tillage, in order to eradicate the fog, and renew the pasture-grasses, or perhaps for the sake of a better rent, it is common to let them for three, five, or seven years only, restricting the tenant to certain crops, and obliging him to lay the grounds down again into grass. Or, where there are circumstances which call for a more than usual exertion, as improving of waste grounds, draining of wet land, enclosing, &c. the tenant gets a lease for a longer period, according as these may require; and in that case 21, 25, or 31 years is the general term of endurance. In some of the moorland parts of the county, the tenants still remain without any lease whatever; but this is not owing so much to their landlords, who are willing enough to grant it, as to themselves,

who have an aversion at being bound by such an expreſs engagement; rather preferring the greater freedom that results to them, from a paction which endures only for a single year.

The term of entry to an arable farm is at Martinmas, or the separation of the preceding crop from the ground. Graſs grounds are entered to at Candlemas in the low part of the county, and at Whitsunday in the moorlands. The payment of rents for arable lands is generally made at three different terms, Candlemas, Whitsunday, and Lammas, in equal proportions, for the preceding crop. In some cases rents are payable per advance, for the crop succeeding; that for pasture is generally paid at Martinmas, or new-year's day at farthest; it being understood that the grazier has had time to draw in the produce of his stock before these periods. Formerly it was the custom to pay the whole rent in *kind*, but this often occasioning disputes between the parties, in all leases lately granted, the rent is altogether payable in money; some few instances excepted, in which a small number of services is still retained.

The Covenants in Leases, or *prestations*, as they are here called, are commonly as follows: The houses, which are delivered over in an habitable condition, to the tenant at his entry, he is bound to keep in proper order, and to leave in an habitable condition at his removal. Even houses, which he may erect during the lease, must be left in good order at the end. Formerly the landlord furniſhed the *great timbers* needed for repairs, but that article is now generally left out. Coal and other minerals are reserved, and a right to work them, upon paying the surface damages. If there be growing timber on the land, the tenant is bound to preſerve it. Where the lands are enclosed, in some instances the whole charge of the fences, and

expense of reparation is laid on the tenant, who in this case is very apt to neglect them; in others, the whole expense is laid on the proprietor, which is neceſsarily productive of dispute and litigation *. This buſineſs ſhould be a joint affair between landlord and tenant. The former ſhould retain the ſole direction, and the latter pay one half of the expense; in which case neither of the parties would be inclined to give unneceſsary trouble to the other, and the fences would be properly preserved, which is the chief object of the ſtipulation. The tenant is generally bound to reside on the lands: this is impracticable, however, in the event of his occupying more farms than one: But the landlord in this case is compensated, for the supposed loſs from his non-residence, by the additional rent which is commonly given for a *led farm*, as it is called. It is usual to debar the tenant from subsetting, although he cannot thereby relieve himself from being still liable for the rent, and the other prestations. In practice, however, this is frequently evaded; but often the landlord, although not obliged, gives permiſsion to subset. The whole straw on the farm (called *steelbow*), was in use to be left on the lands the last year of the lease, for the benefit of the incoming tenant, free of all charges; (but this ſtipulation is now generally aboliſhed;) also the whole manure; a condition that still exists, even without an expreſs clause, it being always underſtood that the manure must be paid for. It is also common to ſtipulate respecting the state in which the lands ought to be left at the end of the lease; that a certain quantity must be in pasture, green crop, &c.

* In a case where the landlord was bound to pay the whole expense of reparation of fences, a tenant has been known to eat down the graſs of one inclosure so much with cattle, that, desperate with hunger, they broke continually out into the adjoining closes belonging to himself, who then pounded his own cattle, and sued his landlord for damages.

WEST.

For remarks and addition observations.

With regard to the order in which grafs grounds ſhould be left, diſputes are very apt to arise. They act wiſely in this case, who oblige the tenant to have at least one crop off them himself, as his own interest will induce him to do justice to the land, both with respect to seed and to labour.

Rent of land. The rent of nursery and garden ground, in the vicinity of Edinburgh, is from 4l. to 10l. the acre. There are many hundred acres thus occupied, of which the rent, at an average, may be 6l. Even lands employed in huſbandry, adjacent to the town, are in some instances as high as 5l.: 4l. is frequent, and 3l. 10s. very common. It is computed, that the lands for four miles around Edinburgh, in which is included much poor soil, are let, at an average, at two guineas and a half the acre. Even at the distance of eight or ten miles from town, there is much land let at 40s. and even some at 50s. or more. Farther up the country the rent is indeed much lower: in the moorlands it often does not exceed 2s. 6d. the acre; but even there, land of a good quality lets as high as eight or ten ſhillings, notwithstanding of the general coldneſs of the climate in these situations.

The whole land rent of the county, may be calculated as under:

Acres occupied by tenants.	*Average rent per acre.*	*Total rent.*
20,000 rich soil near Edinburgh,	£. 2 : 12 : 6	£. 52,500
30,000 good lands more distant,	1 7 6	41,250
55,000 moorland, - - - - -	0 5 0	13,750
55,000 hill or heath, - -	0 1 6	4,125
160,000 acres occupied by tenants, paying yearly, - -		£ 111,625

Acres.

Acres occupied by proprietors:	*Average rent per acre.*	*Total rent.*
10,000 in the low country near Edinburgh, -	£. 2 12 6	£. 26,250
5,000 in the moorlands, at -	1 10 0	7,500
5,000 hill or heath, at - -	1 6	375
20,000 occupied by proprietors worth yearly,		£. 34,125
180 000 total paying, or worth yearly,		£. 145,7[illegible]0

Which at 30 years purchase is £. 4,372,500.

FARMS.

Size. The farms here, with regard to extent, are not greatly different from one another. Few are much less than 100 acres, and almost none amount to 300 of arable land*. They are however, in general, larger than they were half a century ago; from which, some people imagine, that the population of the country has been diminished, as if the mere change of habitation, from the villages to the towns, should occasion an extermination of the inhabitants; or, that a system of occupation, which not only admits of a greater proportion of the crop to come to market, but besides, greatly increases the product itself, should discourage the propagation of mankind.

Capital employed in agriculture. By capital, I mean the money a farmer has occasion to lay out, from the time he enters to the possession of his farm, till the time he reaps, and can dispose of the crop. In the low part of the

* I do not here include under the rank of farms, those small possessions of 4 or 5 acres which are to be met with in many villages, in the hands of smiths, carpenters, or other mechanicks, in which the cultivation serves only to distract the attention of the occupier from his proper profession, and to expose the wretchedness of his exertions in husbandry.

county,

county, this may be estimated at 5l. the acre; 100 acres, for example, requiring 500l. capital, whether the lands are employed in pasture or in tillage. In the moor-lands, where a great proportion of the land is in pasture of a poor quality, the capital required may be 2l. the acre only. On the hills and heaths, it will probably not exceed 5s. On these data, the whole capital in the county will amount to as under.

Acres.			
50,000 in the low country at	£. 5	0	£. 250,000
55,000 in the moorlands at	2	0	110,000
55,000 hill or heath at	0	5	13,750
160,000 occupied by farmers having of capital			£. 373,750

10,000 in the low country at 5l.	£ 50,000	
5,000 in the moorlands at 2l.	10,000	
5,000 hill or heath at 5s	1,250	
20,000 occupied by proprietors		£ 61,250
Total capital employed in agriculture		£ 435,000
Value of the lands as in p. 22d		4,369,500
Sum total laid out on land		£ 4,804,500

People employed in agriculture. Under this head are comprehended such mechanicks as live in the country, whose chief employment is from farmers, or from their servants; as smiths, wrights, tailors, weavers, &c; and occasionally, in hay-time and harvest, as labourers.

Supposing 125 acres to be occupied, in the low country, by one farmer, 250 in the moors, and 1000 in the hills, and that each farmer has at an average 3 *binds*, or married servants, and 4 domesticks, the number in all will be as follows:

Families

	Families of			
in the	*Farmers.*	*Hinds.*	*Mechanicks.*	*Families on 1000 acres.*
Hills -	55	165	55	5
Moor,lands	220	660	220	20
Low country	400	1200	600	44
	675	2025	875	

	Souls.
Farmer's families on an average 4 each *	2700
Domesticks in do. 4 each - -	2700
Hind's families, 5 each - -	10125
Mechanicks at 5 each family, hence -	4375
Total of farmers, their servants, and children	19,900
To which add, in the same proportion, the hinds and mechanicks employed by the proprietors, viz. 460 families at 5 each - -	2,300
Total number of souls - -	22,200

The above population is stated only at an average: in the larger farms, as the greater part of the servants is married, the population is more in proportion; in the smaller, although the number of servants be more in proportion, yet as there are fewer of them married, the number of families and consequent population must be less.

* As often several farmers are bachelors, the number of souls of each family must be less than that of other householders.

Distribution of crop, &c. on a farm in the vicinity of Edinburgh.

No. of acres 285—Rent 636 l.

	Acres.
In wheat -	50
Barley -	35
Beans and pease	35
Oats - -	50
Hay from sown grafs	50
Pasture from do.	20
Natural pasture	5
Potatoes -	15
Turnip -	10
Summer fallow	15
Total -	285

Horses.	
Horses in the ploughs	10
—— Cart -	2
—— Threshing-mill	1
—— For riding -	1
Colts - -	4

Cattle, &c.	
Milch-cows -	4
Bull -	1

N. B. Some cattle also bought in occasionally as the pasture may require.

Families on the farm	16
Of which wholly maintained -	12
Souls in do.	59
Families partly maintained -	4
Souls in do.	11
Total number of souls	70

This farm, 50 years since, was occupied by 3 farmers, who kept 11 horses each, and two cottagers, making only 9 families in all.

Distribution of crop, &c. on a farm in the moor-lands, 12 miles from Edinburgh.

No. of acres about 200—Rent 60l.

	Acres.
Of which in oats	50
Barley - -	9
Pease - -	6
Carry up -	65
Brought up -	65
Meadow-hay, natural	15
Pasture about	120
Total -	200

Live Stock.			
Horses -	11	Bull - -	1
Milch-cows -	9	Young cattle -	20
Draught oxen -	2	Calves -	5
		Sheep - -	78

The above two instances are stated not as rules in husbandry, but merely as *facts* consistent with my own knowledge; the first being that of the farm of Granton, which I rent myself; the second was rented by one of my relations.

LABOUR.

Labourers. THERE is perhaps no county in Great Britain better supplied with work people than Mid-Lothian. A perpetual influx of the unemployed from the north pours into Edinburgh and its vicinity, which would have the effect to overstock the country with hands, were it not for the roving disposition of that discription of people, who are ever in search of new employment, which, on the least lure to emigration, they are ready to abandon; leaving again to the native peasantry the full exercise of their respective occupations. It would, indeed, be no easy matter to dispossess the common people of this county of their stations; for so attached are they to the place of their nativity, that everywhere they are the oldest residenters, surpassing in this respect both proprietors and farmers. It is, however, to be observed, what is indeed the result of this stationary and unambitious disposition, that they are not the most expert in their particular professions. Hence labour, though at a seeming less rate, is really not cheaper here than in other places *.

Their

* A decent orderly behaviour is maintained by the country servants. The Sabbath with them is truly a day of devotion. No weather almost can keep them

Their cottages are now constructed in a better style than formerly; they are larger, better lighted, and also warmer (see *Buildings*). Adjoining to these they have commonly

them from church, clothed in their best array; which, considering their wages, is wonderfully good. During the remainder of the day they keep themselves at home, reading their bibles; or, in many instances, they join together in family-worſhip. The frequenting of taverns on a Sunday is almoſt unheard of among them; hence, inſtead of that languor and ſickneſs which prevents many a poor mechanick from earning his Monday's wages that day, on the contrary, to the farmer, is the moſt profitable; his ſervants working with more alacrity and vigour than on any other of the week. They have always, beſides, been laudably ambitious of giving their children a decent education, and would be aſhamed if they could not at leaſt read the Engliſh language. School-fees are indeed here extremely moderate. Reading is taught for 1s. 4d. the quarter; writing and arithmetick (in which the children of labourers are in many inſtances inſtructed), at 2s. 6d. As the whole labourers employed in huſbandry remain, with few exceptions, attached to the national church, much of their pacific diſpoſition may be attributed to the attention of the eſtabliſhed clergy; who, not ſatisfied with merely delivering from the pulpit the pure principles of Chriſtianity, of which their own lives are exemplary patterns, are alſo at much pains, by frequent private viſitation, to ſee that a proper regard to their ſpiritual inſtructions is obſerved. A few remains of popular ſuperſtition are ſtill to be traced; but theſe are on the point of being extinguiſhed altogether. *Witches* and *fairies* have wholly diſappeared: the *dead-knack* is now heard only by a few old women, who get very little credit from the diſcovery; while *Spunkie* (Will o' the Wiſp), is almoſt baniſhed from the county for want of bogs and ſwamps wherein to exert his influence. The point in which the country people ſeem moſt credulous, is believing implicitly whatever is *printed*; and yet it is aſtoniſhing how little credit they gave to the writings of that jack-a lantern Paine, and his bewildered followers. Even Lord George Gordon was very little reſpected among them. In points of political ſpeculation they are far exceeded in zeal by enlightened weavers, and other philoſophical tradeſmen and mechanicks.

They ſtill, however, retain a great predilection for the cuſtoms of antiquity; particularly on the occaſion of a marriage or chriſtening, at which the entertainment provided, and the various ceremonies obſerved, are conducted on a regular ſyſtem of *etiquette*; which, while they ſhow the convivial ſpirit of the preſent race of the lower ranks, are perhaps repreſentations of the ancient practice of thoſe in a more elevated ſtation. At their marriages they often meet with a liberal contribution from thoſe who attend. Proprietors as well as farmers take this method of promoting matrimony, which generally brings 10l. or 12l. very ſeaſonably to the new-wedded pair. From this alſo they are induced to behave well before marriage: while a bad ſervant meets with a poor contribution, a good one has been known to make 30l.

commonly a piece of ground, of two or three falls, enclosed, for raising pot-herbs. All of them have a few poultry, the produce of which brings them a good price in Edinburgh market.

Their furniture consists in general of two beds, a few chairs or stools, table, chest of drawers, preſs, &c. and they are all ambitious of having a time-piece, if it were only a cuckoo-clock. The whole may be worth from 10l. to 12l. Their clothing partakes of the improvement which has taken place in the different branches of that manufacture, being for the most part bought in Edinburgh, where is to be had great variety of ſtuff ſuitable to their circumſtances, cheap and ſtrong, alſo decent and becoming. In their Sunday's dreſs they make a very good appearance, and even pay attention to the faſhion *. The old men ſtill retain the *blue bonnet*, especially when they are in full dreſs. In the moor-lands, where ſome old farmers ſtill uſe this ancient ornament, they wear a *black* bonnet, to diſtinguiſh them from their ſervants.

In their food they ſtill live in much the ſame ſimple way as their forefathers. Oat-meal forms the baſis, or principal part of their ſuſtenance. They have it regularly to breakfaſt and to ſupper, made into pottage, which they eat with a ſmall allowance of butter milk. At dinner they eat it in bread, in addition to their *kail*, a kind of ſoup made of barley broth, intermixed with greens and other pot-herbs. To this they add at times potatoes, and fiſh of different kinds: ſeldom wheat bread, and ſtill more rarely butcher meat. This mode of living, in which, although with no great variety, there is always abundance of food, ſeems to be very conformable to the natural conſtitution

* The Sunday's dreſs of a young ploughman conſiſts of a coat of blue cloth, at 5s. 6d. the yard; velveret veſt, corduroy breeches, white cotton ſtockings, calf-ſkin ſhoes with black ſilk ſhoe-knots, ſhirt with ruffles at the breaſt, and a white muſlin cravat, fringed, hat worth 8s. or 10s. The ſhoe-knots are indeed rather uncommon, but all the other articles are very much in uſe.

constitution of the people, as they are found to go through their labour without feeling themselves fatigued, and enjoy a state of health which is very seldom interrupted. At an average they are not above two days sick in a year*.

Price of labour. A common ploughman, if married, as is the case in all the larger farms, lives in his own house, rent-free, and receives for his board two pecks of oat-meal, and 6d. in money weekly; besides in harvest, so long as it lasts, his breakfast and dinner daily; gets also two pair of shoes in the year, and all his coals carriage-free.

His yearly wages in all will amount as under:

	£	s.	d.
Paid in money, *as fee or wages*	6	0	0
Ditto, as weekly allowances -	1	6	0
Ditto for shoes - -	0	10	0
61 bolls meal, at 8 stone Amsterdam the boll, suppose at 1s. the peck -	5	4	0
House rent costs, or is worth -	1	0	0
Harvest-diet is worth - -	0	10	0
Carriage of coals, commonly 4 cart load of 16 Cwt. each, worth -	1	0	0
Total - - -	£15	10	0†

Work

* There are several societies formed by regular contribution among the common people in different parts of the shire, for the relief of the indigent and sick. Mechanicks in general are the most inclined to enter into these associations: ploughmen very seldom think of becoming members. They are indeed such a healthy vigorous race, that such a scheme would very seldom be in their favour, unless restricted to their own class.

† Thirty years ago, though the board allowance was nearly the same (being only 2d less a-week), the fee being 3l. without either harvest diet or free house, the wages in all were about 5l. less a-year. Principal servants receive 1l. or 2l. or, in some cases, 3l. yearly more than the above.—Servant girls have 3l. in some cases 4l. yearly, and always live in the family. Boys in proportion to their ability. Day-labourers 1s. in winter, 1s. 2d. in summer: till lately only 10d. and 1s.; 30 years ago, 7d. and 8d. Masons lately 1s. 4d. now 2s. Carpenters 1s. 8d. Women employed in the field, 6d a-day; no board: in harvest they have board, and from 6d. to 1s. a-day, as it may happen; the rate at that time altering weekly.

Work by the Piece is always preferred by the farmer when he can get the work people to do it, which is not yet common, our labourers not being in general very enterprising or speculative.

Land is delved (dug), at 3d. the fall, or 2l. the acre.

Corn was threſhed at 6d. the boll, but of late no labourer will undertake it so low, which has induced the farmers to erect threſhing mills. See *Implements*.

Hedging and ditching is always done by the piece; the rate according to the dimensions. See *Enclosures*.

Potatoes are taken up at 6d. the boll. One man to dig, and two girls to gather, take up 4 bolls or more a-day.

Turnips, potatoes, and every drill-crop, are *hoed* by the piece; the rate according to circumstances, from 1s. to 10s. the acre.

Hay is cut by the acre, from 2s. to 5s. according to the case; 200 stone the acre (about 35 Cwt. the acre Engliſh), can be done at 2s. and a man can in that case cut an acre a-day.

Hay is sometimes *made* by the piece; 1s. ſhould make 200 stone in a dry season.

Corn is seldom cut by the piece; when it is, it is by the *stook* or ſhock, rather than the acre; wheat at 1d. equal to about 5s. the acre; oats or barley at 1d. equal the first to about 4s. 6d. the last to 3s. the acre.

Smith-work is always by the piece: horses are ſhod at 10s. the year when the smith furniſhes iron; and at 2d. the ſhoe, and 1 d each remove, when the iron is furniſhed by the employer. A new ſhoe to a horse is in some places 6d. in others 7d. all furniſhed by the smith. Cart-wheels are ſhod at 8s. at 10s. or at 12s. the stone weight, which will sometimes amount to 14s. the iron furniſhed by the employer. Plough-work is sometimes undertaken at a firlot of oatmeal for each horse, including the ſhoeing of the horse; the iron by the employer. In general iron-

work is furniſhed by the ſmith at 4d. the lb. coarſe work; and 5d. the lb. fine.

Labour commences at ſix in the morning, and ends at ſix in the evening, in ſummer; at ſun-riſing and ſun-ſetting in winter, by all day-labourers; but by ſervants hired by the year, at ſuch hours as ſuit the maſter's convenience, and which in common are not much different from the above. Servant-maids in a farmer's family are employed at leaſt 16 hours a-day.

BUILDINGS.

Farm houſes. A FARMER's *mains*, as they are here called, conſiſted formerly of a ſet of low buildings, in the form of a ſquare. One ſide was occupied by the maſter himſelf, whoſe habitation was compoſed of two or three diſmal apartments, on an earthen floor, having a low ceiling, and a few diminutive lights. On another ſide ſtood the barn, in which the roof-timbers, from the idea of giving more ſtrength, were built into the wall from the foundation; the wall itſelf not being more than 5 feet in height. Oppoſite to the barn were the ſtables, and the byre or cow-houſe. The ſtables were totally without diviſion, and the horſes fed in common; but the neat-cattle, leſs paſſive, were each confined to their ſtakes. The cottages occupied the remaining ſide: in the midſt of all lay the dunghill. These buildings were made of turf and ſtone alternately, or with ſtone, and clay for mortar:—the roof of thatch, or of thatch and *divot* (turf or ſods) intermixed *.

The

* It was alſo very common, in times ſtill more remote, to have a number of theſe farm houſes placed together in a village, generally in the vicinity of the

The farm house and offices are still disposed in the form of a square: in some cases open at the side opposite to the house, and in others bounded by a low wall, or a set of ſheds. The house is generally two stories in height; the apartments commonly 5 or 6 (besides kitchen, dairy, larder, &c.) finiſhed in a neat style, with a proper elevation of ceiling, and diſpoſition of light. The barns are usually 20 feet wide, the walls 8 or 10 feet high; the length in proportion to the size of the farm, holding from 50 to 100 bolls of corn in the straw at a time. They are commonly divided into two parts at least, that different kinds of grain may be threſhed at once: in some instances there is a loft above the threſhing place for holding corn.

In the stables the horses are put up into stalls, generally two horses together: in some stables each horse by himself, a practice not so common as it ought to be. Milch-cows also, in a few instances, are kept in separate stalls. In farms where no *winterers* * are kept, the dunghill is

the laird's house or castle, the more readily to serve for his protection, or to protect one onother from thieves or other banditti, with which the country was infested.

Among the many improvements, which have been made in the present century, it is none of the least, that the internal police of the country has become more effective. The bands of robbers and other vagrants have been extirpated, private property more completely protected, and the peaceful inhabitants of the villages have been enabled to apply themselves to their vocations in security, and without alarm. It has become no longer neceſsary, that the whole farmers on an estate ſhould be cooped up in the same village. They may now settle, each in the midst of his own farm, in a manner much more to the advantage of the farmer, and more favourable to the embelliſhment of the country. This has, however, been productive of no little grief of mind to the declaimers against the present times, who never perceive any thing in an alteration but what is ruinous. They deplore the remains of the farm houses in the different villages, and the supposed consequent depopulation of the country; never adverting, that the inhabitants are only removed to a better situation than what they formerly enjoyed.

* Lean cattle kept in winter, for the purpose of consuming the straw and making manure.

is placed behind the stables, out of view; but otherwise, a regard to conveniency takes place of that refinement, and the straw-yard with the cattle are retained in the middle of the square as formerly, with the improvement of a free paſsage to the houses, defended by a wall.

The whole buildings are of substantial mason-work, roofed usually with tyle, except the dwelling-house, which is commonly covered with blue slate. Some people, indeed, still retain the thatched roof, but which being not only much dearer than tyle, affording much ſhelter to vermin, and more liable to fire, is generally going into disuse. The expense of erecting farm houses is regulated generally by the extent of the farm: the tenant who occupies the greatest extent of land, or pays the highest rent, is understood to require not only more extensive offices, but that his dwelling-house ſhould be more commodious and elegant. A year's rent of the farm may be estimated to be the common allowance for building the houses; which, in the low part of the county, may amount to from 300l. to 400l.*

* The cottages were formerly very mean; the walls (built of mud and stone) would have been unable to sustain the ponderous roof of thatch and divot, had they not been very low and well propt up with very clumsy buttreſses of unhewn stone. The inside was still more exceptionable. The *lumm*, or chimney, of a dismal aspect, erected against the end-wall, by its unaccountable width, took up a great proportion of the hut. While this was intended to give a free paſsage to the smoke, which it generally failed to accompliſh, on the other hand it served to admit a great deal of rain. An additional light to that of the chimney, from a slit or *bole* in the wall, made up the whole architecture of the building. At present, cottages are constructed of good mason work, seven or eight feet high in the walls, and neatly thatched with straw: in some cases with a ceiling, and timber-floor; a refinement, which, in the present spirit for embelliſhment, is likely to become more general. The size 16 or 18 feet square, which is found sufficient to hold the furniture commodiously. They are generally built at the distance of 100 or 150 yards from the farm house, several of them together in a row. The expense of erection about 10l. each and the rent 20s. or 25s.—The rate of building is as follows: A rood (36 square yards) of mason-work, 25s. and materials. Tyles, 40s the 1000; a rood of tyle-work 10s. and the materials. Timber (fir) 1s. 1s. 3d. and 1s. 6d. the cubic foot, according to the quality. Lime 1s. 2d the boll in town; at the kiln, 9d.

ENCLOSURES.

ENCLOSING appears to have been but lately introduced, and to have followed, rather than preceded, the other improvements here. There are, indeed, a few old enclosures to be met with in the vicinity of almost every gentleman's seat; but these are always of small extent, being merely what were occupied by the proprietor himself; the whole lands let to the tenants having continued till of late altogether undivided by either wall, hedge, or ditch. Even so late as 30 years ago, there was hardly a farm enclosed in the whole county; it is only within these few years that the subdividing of lands has come into general practice; and this owing as much to the exertions of the tenants, as of the proprietors of the grounds *.

Modes of fencing. The first fences, at least those which can be traced back 50 years, were generally of high stone walls, executed in a style of great sufficiency; which, however expensive they might prove, were perhaps unavoidable, from the open state of the adjacent lands, from which a few detached enclosures were liable to be broken into by the cattle of the neighbourhood, at that time accustomed in the winter to an unlimited range over the whole fields.

At present the following are the kinds of fence in use:

1. *Stone walls built dry*, four feet high, with a double coping of turf: if of free-stone, in which the county abounds, they stand for a long period, with ordinary attention.

* One great obstacle to enclosing arose on the part of the proprietors, who exacted too high a rate of interest from their tenants for the money they thus laid out on their own lands, which deterred the latter from agreeing to the proposal; 6, 7, or 7½ *per cent.* was the usual condition, besides the expence on the tenant of upholding the fence.

tention. The price depends much on the carriage of the stones, which is more or leſs in proportion to the distance from the quarry. Stones are quarried, or purchased for 3d. or 4d. a cart-load; 36 load to the rood. The mason-work 8s. or 10s.

2. *Stone and lime walls*, are generally preferred by those who have a permanent interest in the lands; and where good stones cannot be had, lime becomes indispensable. The mason is paid 12s. or 15s. for this kind; it requires the same quantity of stones with the other, 6 bolls of lime-ſhells, and 6 carts of sand, the rood. The ſhells are at different prices; from 10d. to 20d. the boll. This wall is usually five feet high: 21 yards make a rood, and will hence cost from 50s. to 3l.

3. *Thorn hedges*, which make the most pleasant and the warmest fences of any *, are not so generally used as could

* Enclosures are productive of other and much higher benefits than merely defending lands from cattle, &c The warmest air lies nearest the surface of the earth; being that portion of the atmosphere, which, like a blanket, Nature spreads over the soil and its productions: and hence fences of all kinds tend more or leſs to prevent such a valuable covering from being blown off by the winds. The particular kind of fence best suited to this purpose, seems to be a thorn hedge. This forms a kind of net-work, partly solid and partly open. The solid parts prevent the immediate paſsage of the wind, make it rebound, mount to a considerable height, and not be able to recover its former low direction along the surface of the earth, till some space of time after it has paſsed the top of the fence. The open parts, or interstices, on the other hand, suffer the wind to paſs through, but by dividing the great stream into numberleſs small currents, and by variously bending and distorting the lines in which these currents flow while paſsing between the branches, its force is almost altogether broken; so that what was a blast on one side of the hedge, may be said to come out a breeze on the other. While a hedge fence, from these circumstances combined, protects the lands from boisterous weather to a great distance beyond the place where it stands: it also in calm weather allows the air to circulate and paſs through it to either side; a circumstance highly favourable to the healthy growth of the immediately contiguous crop.

Stone fences have none of these advantages; unleſs it be, that like to the solid parts of a hedge, they in a similar manner prevent the immediate paſ-

could be wiſhed, from the long time they require to be attended to before they become ſufficiently fencible: they are however coming more and more into practice, and are treated in the following different ways: 1. To insure a strong fence from the beginning, some people plant a double hedge, with a deep *ditch on each side*, and by way of embelliſhment, stick a row of trees in the narrow space between. This never fails to become abortive in the end, the wood and the thorns mutually injuring one another; and even where there are no trees planted, the one hedge hurts the other, so that both in a few years become *stunted*, and periſh. 2. The thorn fence most generally adopted is raised from *one ditch* only, with a single or more properly a double row of thorns. The ditch 3 feet wide at top, 12 inches at bottom, and 3 feet deep, is made for 4d. the rood of 6 yards. The thorns are planted in a single row at 4 inches asunder, in a double row at 6 inches, and as they cost 1s. the 120, the expense of 21 yards in length, equal to the rood of a 5 feet high wall, amounts to only 2s. 9d. the single row, and 3s. 3d. the double, which is obtaining a fence on very easy terms, though indeed it will require 6 or 7 years, with some little expense in cleaning, before it may completely answer the purpose. 3. In dry lands not affected by under water, nor liable to be overflowed with land floods, the thorns are planted *without any ditch* at all, which, in such situations, is the most judicious practice of any, as the plants thrive better,

sage of the wind; but this is generally in a much smaller degree, as hedges for the most part are of a much greater height. One circumstance, however much in favour of walls, is, that they can be erected in a ſhort space of time; which gave occasion to the late Lord Elibank to say, "he preferred a wall because it was major the first year" This is true, indeed; but it must be observed, however, that it is major, rather in its character of wall than of fence.

For remarks and additional observations.

er, having a sufficiency of moisture; the hedge itself ccupies as little room as a stone wall; and besides being btained at lefs cost, it admits of being kept clean with he effective operation of digging on each side with a pade.

4. *Hedge and wall.* This is a mode of enclosing, coming more and more into repute, which partakes of the nature both of a quick fence and a stone wall, enjoying the enial warmth of the one, and having a portion of the stability of the other. It is performed by building a slender vall about 3 feet high, immediately before and close to the ow of young thorns, rising to the height of 18 inches bove the level on which these are planted, and compoed of dry stone, in some cases pointed with lime, which loes not cost above 8d. or at most 1s. the yard in length. t affords a complete fhelter to the young plants, and as hese grow up, their branches project over this wall, and eing trained up on a line with it, the united effect of oth, is to form a fence impervious to every kind of cattle, even to dogs and lefser animals. This fence is mostly used along the sides of roads, to which it is peculiarly adapted, as it becomes when complete a better defence against intrusion, than any stone wall whatever.

Pruning of hedges. The fathionable mode of pruning hedges formerly, was to cut them over 4 feet from the ground, keeping the top quite flat, and the sides neatly clipped. In the course of a few years pruning, the head acquired a solidity almost impenetrable, but the lower parts being overtopped, become thinner and thinner, till in the end, the lateral branches failed altogether, and left the upright stems bare, which rendered the hedge not quite so fencible, as it permitted dogs to creep in, the smaller cattle to get out, and also tended to destroy the thorn itself. A more rational plan is now adopted. The thorns are pruned in a regular slope from the

the bottom, ending in a point at the top; the whole hedge having hence a free exposure to the air, and its growth encouraged from every part. The Duke of Buccleugh's hedges around Dalkeith are beautiful examples of this kind of trimming. They may almost be called living walls. The utility of the plan is striking, and forms a sufficient apology for such a deviation from nature, although the grandeur and beauty of the unpruned hawthorn in full blossom, is unrivalled by any vegetable production in this part of the kingdom.

Some people allow their hedges to grow unclipped, but at certain intervals cut them down almost to the ground, from which they spring again, and are in a few years as strong as ever. When the lands are in tillage, the hedge is cut down; when in the course of rotation, they revert again to pasture, the hedge, by that time renewed in its full vigour, becomes anew a fence for the cattle. In this manner, instead of occasioning the expense of annual dressings, it becomes a source of profit to the farmer, from the value of the brushwood, which is here applied to many purposes.

5 *Galloway dike.* A very particular and formidable looking fence is used in the moor-land parts of the county, where the pastures being generally fed off with sheep, a thorn hedge is unsuitable. This is what is called the *Galloway dike*, built of whin stone, usually 5 feet high. It is the manner in which it is constructed that renders it singular. To the height of 2½ feet, it is built neatly, but without mortar; in breadth from 20 inches to 2 feet. Upon this is laid a thin course of flat stones, which project three inches over the under part. Above these are placed, in a seemingly careless manner, a set of rugged round stones, which in building are brought gradually to a taper, ending at last in stones of three or four inches dia-

meter at the top; but so thin laid, that the light is seen in numerous large vacancies, and the wind blows through them as through a hedge. From its tottering appearance, cattle of all kinds are shy of approaching this kind of barrier, even hares avoid it. Being well founded, and having little top-weight, it stands well, and is easily repaired when it falls into disorder; which, as no living creature likes to attempt it, is very seldom the case.

Form of enclosures. Enclosures are too commonly formed by straight lines into regular figures. There is an absurdity in this: for if the land itself be irregular, and also wet, the ditches, which constitute a chief part of the fence, should be laid out in such a direction, as to carry off the water at the same time. Even where the ground is dry, and lying regular, the nature of the soil should be adverted to, that land of opposite qualities may not be included in the same close. The affectation of uniformity is but a small consideration, opposed to the loss that must arise from such unnatural divisions *.

Gates. These are of many different figures, according to fancy. The most approved, however, are of one leaf, constructed of four or five horizontal bars; having one placed diagonally for strengthening the whole. This diagonal bar ought to rise from the under end of the back-post, to the upper end of the one opposite, instead of the reverse.

* Enclosing must have had the favourable effect of helping to increase the number of mankind, by affording an increase of employment, arising from the various operations of building, ditching, hedge-trimming, &c. which attend it. But the most important consequence of enclosing is, that it acts as a stimulus to population, from its effects on the soil; which being from that cause rendered more fertile, will produce the neceſsaries of life in greater abundance, and hence enable any given quantity of land to maintain a greater number of people.

reverse position, which is usually given to it. In hanging the gate, most people adjust it to a perfect perpendicular, from which it naturally tends to depart; whereas, were it to lean a little backward, it would not only move much easier, but its natural declination would be continually towards the proper position.

ROADS.

BEFORE the establiſhment of turnpike duties for repairing the highways, the roads here were in a wretched condition. Unfit for carriages even in the dryeſt ſeaſons, in wet weather they were almoſt impaſsable, even on horſeback. In fact, wheel-carriages for the purpoſes of huſbandry were not uſed *. Even in the neighbourhood of Edinburgh, till within theſe 40 years, hay and ſtraw in truſſes, were carried to market on horſe-back; and dung was brought back in the ſame manner in bags. The farmers in more remote ſituations could not even aſpire at this miſerable mode of conveyance; and it was with the utmoſt difficulty that they could merely carry their few bolls of bear to town, a boll at a load, and return in the ſame day to their diſmal habitations in ſafety.

Few counties now are better accommodated in roads than this, as adequate funds for their ſupport have been provided. The great poſt-roads, which lead in every direction to Edinburgh, are generally kept in excellent order, ſo that the communication between town and country

* Sledges were employed for dragging the corn from the fields to the barn-yard, and ſometimes in tranſporting goods to market They are mentioned in a turnpike act in 1751; but in another in 1755 there is no notice taken of them: from which it ſhould ſeem, that they had been laid aſide about that period

For remarks and additiona observations.

country is accompliſhed with ease and expedition; as it likewise is from one part of the county to another, by means of the croſs roads, of which there is an abundance in every proper situation *.

The turnpike roads are divided into districts, and the money collected in each wholly laid out on its own roads. The management is vested in the country gentlemen. Every proprietor poſseſsed of 100l. Scotch of valuation, and his heir apparent, are entitled to act as trustees. These employ surveyors, labourers, &c. The following is the state of the funds, Nov. 4. 1788 †.

	£.	s.	d.
Actual debts - -	16,060	18	4
New debts proposed to be contracted	8,735	5	5
Total debts would then be -	24,796	3	9
Interest of ditto for one year -	1,239	15	2
Annual repairs according to surveyor's report - - -	1,856	15	0
Contingencies allowed - -	810	9	4
Total annual expense would then be	3,906	19	6
Annual revenue from the tolls was	4,545	0	0
Hence a sinking fund for paying of the debt - - -	638	0	6

This was not, however, supposed to be sufficient: a new act of parliament was applied for, which took place August 15th, 1789, and will expire in 1835, in which the trustees

* The 10 great roads with their branches amount to about 175 miles. The croſs roads above 200 miles; besides private roads to Gentlemen's seats, and farms, as measured from Armstrong's Map of the three Lothians.

† Extracted from the report of a committee of trustees at that time.

trustees are empowered to borrow to the extent of 27,300l. and to raise the rate of toll one half, besides erecting new bars on roads formerly free. The net revenue from the tolls is now 8019l. of which 1505l. arises from the new turnpikes on the post-road to Muſselburgh. There are, however, some of the districts in which the rate of toll is the same as formerly, as it is found ſufficient to keep the roads in proper order.

The croſs-roads are on a different footing. They were disjoined from the others in 1784; and the ancient statute labour (firſt eſtabliſhed in 1669), or a compoſition in its place, allotted for their ſupport. Each pariſh has the entire management of its own roads. The landlords are the trustees here also: nor can it be veſted in better hands, as they have a permanent intereſt in their being kept in proper order. The aſſeſſment is laid on by the plough-gate, which in ſome caſes in eſtimated at 45 acres, and in others, perhaps, at 500, according to circumſtances. The law authorizes a levy of 18s. on the occupier of the ground, but no more to be actually collected than what is neceſſary. Many pariſhes aſſeſs only at 12s. Supposing 15s. at an average, as there are 1170 plough-gates, the ſum in all laid out on the croſs-roads will be 877l, 10s. a year. They are now coming faſt into good order: the regulations, indeed, can hardly be made better than they are *.

IMPLEMENTS

* The art of road-making ſeems now to be better underſtood. It was at firſt the practice to gather them high up into a narrow ridge, and lay them with the greateſt ſtones that could be found. They are now made much wider, more flat, and the ſtones broken into ſmall pieces. There are inexhauſtible materials for this purpoſe all over the county,—rotten-rock, gravel, whinſtone, &c. The firſt duties levied for the ſupport of the roads, before the union, were appointed by the privy council of Scotland, and amounted only to 1-6th of a penny on a loaded horſe, &c. The firſt act of parliament, in the 12th of Queen Anne, raiſed the toll to ½d: there have been other four acts

IMPLEMENTS of HUSBANDRY.

NOT many years since, these were few in number, and rudely constructed. They have undergone much alteration of late, and several instruments of labour have been added to the former list.

The *Plough* commonly used is an improvement upon the old Scotch plough, being reduced in dimension, and somewhat altered in principle. It was formerly long and heavy, yet well adapted to the powerful draught of four or six horses, that were generally applied. When it came to be perceived that two horses were sufficient for every purpose of tillage, this cumbrous implement was found by its own weight to occasion an unnecessary addition to the labour: it was therefore constructed on a smaller scale, but the original proportions still retained. It has since been improved in principle by Mr James Small at Ford, chiefly in the mould-board, which now receives the furrow on a curve, instead of the straight *wrest*, by which the resistance is more easily overcome; the furrow being gradually laid over to its proper position. It is likewise not so apt to be put out of order; and, simple in its structure, it is adapted to almost every situation. The chain by which it is drawn, fixed nearly as far back as the culter, serves merely to strengthen the beam, which, from its necessary curvature, would be otherwise apt to break. The mould-

since, in which the duty has been gradually raised to its present rate of 1½d. a saddle-horse, &c.

One remarkable circumstance occurs in the original establishment of these turnpike duties:—Riding horses, and coaches, &c. were altogether exempted; the whole being levied on pack horses, carts, &c. Yet this took place at that precise æra, when persons are idle or wicked enough, to endeavour to persuade us, that our constitution was then more favourable to the rights of the people than at present.

mould-board is generally of cast iron. The price of the plough about two guineas.

The *Harrow*, of which there are several kinds, is commonly made of four bulls connected by four slots, generally four feet square, weighing about three stone, and has 20 iron tynes or teeth, of about 1lb. wt. each. Each harrow is always drawn by one horse; three of which are usually yoked to three harrows, under one driver. The instrument may be improved in principle by altering the arrangement of the tynes. At present several of these follow one another in the same track, by which only 11 different ruts, in place of 20, are made; whereas each tyne ſhould take a separate course, and break the ground into as many divisions as the tynes amount to in number. There are some instances of this amendment having been already made, by which two harrows do nearly as much work as three. A pair of harrows cost about a guinea.

Rollers are generally of free-stone, 5½ feet long, 15 inches diameter, weighing when mounted, about 12 cwt. drawn by two horses, and cost about two guineas. Every farmer has at least one, for smoothing the graſs-lands, to which it is peculiarly adapted; also for breaking the clods of rough land in tillage: in which it is not clear that it is so effective as the ancient clod-mallet; for although, in some cases, there may be more work done for the same expense, in ge era there is leſs *, and not so completely to the purpose, besides giving the whole land, without distinction, the same preſsure, whether needed or not.

Of *drilling* and *hoeing* instruments there are many; usually of a plain and effective co struction. The drill-bar-

row

* A man with the clod-mallet will go over two acres a-day, if it be not an extraordinary case. A man and two horses will have enough ado to roll six on rough lands.

For remarks and additional observations.

row, for sowing one row at a time, is a simple machine, adapted to different grains, and small seeds, in any required proportion. A machine of this kind, for sowing several drills at once, and at such different degrees of width as may be needed, would be a great acquisition, provided it were not too complex.

Wheel-carriages are what are called the *close cart*, and the *corn cart*, both of a light construction; drawn by two horses, and of late by one. The large wains, or heavy four-horse waggons, in Engliſh huſbandry, are reprobated here. Two horses in a cart are commonly loaded with 18 or 20 cwt. One horse draws still more easily 12 cwt.: even 24 cwt. is frequently put to a single horse, and 30 cwt. on good road is not uncommon. This cart has lately been much improved: placed on its axle, the bottom at each side projects over the inner head of the naves, as far as nearly to touch the spokes of the wheels; from which acquired breadth, the capacity is enlarged, while the side standards being brought nearer to a perpendicular, are able to sustain more weight. The dimensions are: length 5 feet 3 inches; breadth below, 4 feet; breadth above, 4 feet 3 inches; depth 1 foot 3 inches; containing about a cubic yard. Price of a cart, painted, 11. 15s. not including wheels, axle*, nor mounting, which may amount in all to 6l. or 7l. more. The *corn-cart*, which is only placed occasionally on wheels, for carrying hay, or corn in the straw, is composed of standards, rods, and spars, without deals, but is broader and much longer than the close cart, that it may hold a more bulky load. It costs from 15s. to 20s.

Fanners, for cleaning corn, have been in general use here for more than 50 years. They run 12 bolls an hour, and

* Wheels generally 52 inches high; axle is commonly of iron.

and in 2 operations, or 3 at most, the corn is completely cleaned; 4 people are neceſsary to attend them, for *ſifting*, *riddling*, &c. Some fanners perform these operations themselves, by which two persons leſs are needed. They cost from 2l. to 5l. and last 20 or 30 years.

Thraſhing mills, lately invented, were very soon afterward introduced into this county. They are now very general, and of various dimensions and construction, wrought by 1, or 2, or 4 horses, or by water, which last is the best method of all. One-horse mills will thraſh a boll in the hour, the others in proportion. They cost from 25l. to 60l.: some perhaps more, particularly when they are made to clean the corn at the same time, which requires more machinery, as well as more space *.

MANURES.

From Edinburgh and Leith are obtained about 40,000 cart-load of street-dung annually, which is commonly expended on the lands within 5 miles of town, though there have been a few instances in which it has been carried by sea to a greater distance. For collecting this manure, arising from the sweepings of the streets, which are for this purpose arranged into districts, the town employs scavengers, and the farmers in the neighbourhood furniſh carts to carry it daily to by-places, without the walls of the city, laying it together in dunghills, from which

* As there are still many improvements making on this machine, it would be premature at present to describe its mode of operation, which indeed could not be well done without a drawing. Its general principle, however, consists, not in beating the corn, but in swingling it like flax, by means of a cylinder 4 feet in diameter, which moving at the vast velocity of 240 revolutions in a minute, and giving 4 switches each time, expels the grain completely from the straw.

which at their leisure they drive it to their lands. It costs from 1s. to 1s. 6d. a load, of about a cubic yard each. Stable-dung is sometimes sold at a dearer rate, particularly when it is exchanged for straw (the whole dung for the whole litter) when it will cost perhaps 3s. or 4s. Thirty or 40 load an acre is the usual allowance, and has always the greatest effect when laid on new from the streets, which however is only practicable in small quantities, great part of it being kept a whole year before it can be applied.

Farm-yard dung in the neighbourhood of Edinburgh is made at the rate of perhaps 2½ load for each acre in the farm, and would be much more, were it not for the universal practice which prevails there of sending a great proportion of the straw to market. On a farm of 100 acres, 50l. worth of straw will be sold in a season; but then, for 20l. twice as much manure can be bought as the whole could have produced had it been consumed at home. The servant who takes the straw away, also collects the street dung, these two branches of labour being generally united for the sake of economy.

Straw is very seldom brought, or dung carried, above 5 miles from town. In order to obtain as much manure as they can, the farmers beyond that distance generally keep as many cattle as consume the whole fodder on the lands. Where turnip is cultivated, a still greater and richer supply is produced. A small quantity is also got from the country-towns and villages, but always at a much dearer rate.

Lime abounds in different parts of the ſhire, and altho' but little known as a manure in the low part of the county, yet it is much used for that purpose in the upland districts, as well as in the adjoining counties to the south, Berwick, Roxburgh, and Selkirk, to which it is brought from Mid Lothian, by a land carriage sometimes of 20 or

30 miles. The farmers in the neighbourhood of Edinburgh are, however, justified in their disuse of it, as its effect there is so very feeble, and even dubious, which may perhaps be accounted for, from the lands having been so long manured with street-aſhes, which may have precluded the agency of the lime as a ſtimulus, or rather from having been so long in cultivation: for it is certain, that it is on ground newly brought into tillage that lime has the greatest power.

Shell and *stone marls* are to be had in different places, and have been used as manures; but the benefit has not been so evident, as to give much encouragement to the application.

Compost dunghills, consisting of ditch scourings, lime, weeds, road-soil, &c. are often made; which being intimately intermixed, are found to be a good, though not a very powerful manure.

Farm-yard dung is generally turned in the dung-hill, the better to promote fermentation, and consequent putrefaction; but the leſs time it lies, after this is accompliſhed, is underſtood to be the better: likewise, when laid on the land, the sooner it is ploughed down the greater is its effect. Yet it is customary to spread manure on graſs-grounds, where it muſt remain long exposed; but it is always the ſhortest and best made that is thus applied; and being done in the winter season, when the powers of rarefaction are least, it is leſs apt to be diſsipated by exhalation. The rains also, frequent at that time, contribute to retain it, by waſhing it down among the roots of the plants *.

MARKETS

* All manure is toll-free: a wise regulation, which by removing a conſiderable obstacle, tends to promote the melioration of lands, by the application of enriching substances, which cannot be too much encouraged. An attempt, however, was made about ſix years ago, to get manure included un-

MARKETS AND FAIRS.

EDINBURGH is the great place of sale, for this as well as for several of the surrounding counties. On Wednesday is the principal market: cattle being sold in the morning; oats, beans, and pease, at eleven o'clock; and horses in the evening:—on which different accounts there is a numerous concourse of farmers and country people to town. There is a market for ſheep thrice a week, for meal once *, and for straw every day. Hay is sold privately; also wheat and barley: there being no particular place allotted for the sale of these articles. Potatoes, greens, &c. are sold from street to street; but there are particular stands, where retailers, who buy them in wholesale from the farmers, sell them out in small quantities to the public. Every article of country production finds a ready sale here†.

Dalkeith

der turnpike duty, but was resisted with great firmneſs by the farmers who were succeisful in the contest. The city of Edinburgh joined their opponents, but having at that time a considerable district of street aſhes to let, no farmer would purchase it; so that the *good town* had to collect the *fulzie* itself for several weeks, till the huſbandmen came into better temper. Street manure has declined in value ever since: the farmers endeavour to provide themselves in greater abundance at home, persevering, from interest, in a measure to which they were at first prompted by disgust.

* About 200 bolls weekly are brought to market, one half of which from the counties to the south; but this is not above one fourth of what is sold at Edinburgh in private ſhops. The chief use of this market is to regulate the weekly price: A boll of meal is 128 lb. Amsterdam weight.

† The duty, or *custom*, collected at these markets forms a considerable branch of the revenue of the town. An objection has lately been made on the

Dalkeith has a good market once a week for grain, and another for meal, which are both well frequented.

The fairs in this county are Edinburgh Hallow-fair, beginning on the second monday of November, in which for two days are to be seen considerable numbers of cattle and horses; as are also at Mid-Calder on the 2d tuesdays of March and October, and at Dalkeith on the 3d tuesday of that last month.

LIVE STOCK.

It is but of late, that attention has been paid to the different breeds of animals in this county. Having the metropolis in its bosom, the preference has been given to the cultivation of grain and vegetables for the Edinburgh market; leaving, in a great measure, the rearing of cattle to the more distant counties, where, from the lower rate of rent, the profits arising from pasture are to be depended upon.

Horses. There may be about 5000 horses used here for the purposes of husbandry. Of these, not one half are of our own rearing, but have been purchased, from the shires of Linlithgow and Lanark. There may be about 600 required yearly to recruit this stock, of which, till very lately ⅓ were bought at an annual expense of at least 6000l. to the farmers here, which chiefly went into the pockets of the Clydesdale breeders. This however is but

part of the farmers, who state that there have been encroachments made by the collectors, beyond what the city-charter bears. An action at law has been the consequence, and the decision at present is given against the borough.

but a small proportion of their sale; for, besides some which go to the north of England, there is from many counties in Scotland, a constant demand for the draught horses of Lanarkſhire, a durable active breed, esteemed among the best of the species in the island.

Since 1784 the price of horses has rapidly advanced. The prime sizes, 16 hands and upwards of height, which at that time sold for 18l. or 20l. have gone as high as 30l. or 35l. The smaller kinds, from 14½ to 15½ hands, which include most of the plough horses, have not been so much sought after, so that their price has only risen from 12l. or 14l. to 18l. or 20l. On the whole, the prices seem to have risen to the level of the Mid Lothian rents, from which most of the farmers now endeavour to breed as many as will at least supply themselves, and may probably be able in a few years, to rear some for the carriage and the saddle, for both of which there is such a constant demand in Edinburgh. Besides, from that spirit of emulation which at first accompanies any general undertaking, it may be hoped that the breed itself will be improved, and become of more intrinsic value, even although the price ſhould fall, which within these 6 months it has indeed done to the amount of 20 per cent.

Black cattle. The breed of black cattle has hitherto been as little attended to as that of horses, and as the price still continues moderate, there is little probability that the farmers will soon be induced, in this high rented county, to enter into a competition, in regard to this article, with the breeders in more distant places, some of whom have equally good pasture at leſs than half the rent. Milch cows are however highly worth cultivating, in so populous a neighbourhood, and have always been reared for that purpose. At the same time there is no breed peculiar to the county,

ty, the cows consisting of almost every kind in Britain. The greater part are ſhort legged and thick bodied, weighing from 24 to 36 ſtone, (16 lb. Amſterdam each,) worth from 6l. to 9l. and giving from 8 to 15 Scotch pints* of milk a day, which yields at an average a pound tron, (22 ounces) of butter for each 10 pints. This ſells from 10d. to 1s. 3d. the pound, and is generally made from milk not above 2 or 3 days old, in the common plunge churn. Of late a patent barrel churn has been introduced, which has the effect of diminiſhing the labour, and improving the quality of the butter, by the admiſsion, through a funnel, of a free communication with the air, which prevents any rancidity. As it is only *cream* however that has as yet been churned in this way, which muſt be ſeveral days in collecting, though freſh milk from the cow would anſwer equally well, it is doubted if the butter can be ſo ſweet by this mode as by the former. New milk ſells at 3d. the pint, and is obtained only in town or the immediate vicinity. Butter milk is ſold at 1d. and is brought from all the country round, ſome of it as far as 15 miles: formerly in barrels of 16 pints each, 2 on a horſe at a time, but now in ſmall carts in which are 6 or 8 of theſe, beſides butter, eggs, &c. There may be about 700 or 800 milch cows brought into this county yearly to keep up the ſtock, chiefly from the Merſe and Tiviotdale, and which are principally bought up by the cow keepers in the ſuburbs of Edinburgh, who generally feed them off the firſt ſeaſon, as ſoon as they go dry, with grains, turnips, yams†, &c. Neither the making of cheeſe, nor the feeding of calves for veal is much practiſed here, the demand for butter and milk being ſufficient for the whole produce of the dairy.

Sheep

* The Scotch pint contains 103.4 cubic inches, the Engliſh wine pint 28.875, and ale pint 25.35.

† A large coarſe kind of potatoe ſo called here.

Sheep. There being a great proportion of hill and moor in this county, several flocks of ſheep are accordingly kept, but even these are not all natives, many being bought in from year to year, generally from Tweeddale. These are a small coarse woolled kind, the fleece seldom worth a ſhilling, and the carcase rarely weighing 12 lb. a quarter. In the lower parts of the county, a better kind, on some farms, has however been introduced, principally of the Cheviot breed, in some cases croſsed with the Hereford, in others with the Bakewell species. These last in particular seem worthy of cultivation, as besides giving a fleece of at least 4 times the value of the black faced moorlanders, and rising from 15 to 25 lb. a quarter, they are now known to agree very well, both with the climate and the soil. It is believed by intelligent people, that a much finer breed may be introduced with advantage, on the greater part of the high lying pastures of this county. Gala water in particular abounds in ſheep walks little inferior, if at all, to the hills of Tiviotdale. The present stock there, however healthy and valuable as moorland ſheep, are far below the worth of the Cheviot flocks*.

Swine. Almost every farmer keeps one or two pigs to pick up any corn, &c. that may be scattered about the doors, but few people, except distillers, breed them to any extent. Pork and bacon are not yet reliſhed as food by

* While there is every reason to hope that the value of the fleece will be greatly augmented through the exertions of the Wool Society, an individual farmer has already ſhown how much improvement can be made in the single article of rearing early lambs for market. Mr Brodie at Upper Keith, (a cold situation, at the verge of the Soutra hills,) has been distinguiſhed for some years by his enterprise in that line, as he delivers generally 100 lambs before the end of February, for which he receives 20s. or a guinea each. It were to be wiſhed that an accurate account of his practice were known. But it is in the province of the East Lothian survey to give this to the publick.

by the common people; indeed to very fat meat of any sort, the Scots in general have an aversion. I believe three fourths of the lower ranks would rather starve than live on pork. Even among the gentry, it is not so generally used, as south of the Tweed. The demand for it in the Edinburgh market being very limited, the distillers are frequently under the neceſsity of salting and sending it to England, where pork is more agreeable to the palates of the people. Young pigs are however pretty much in request, selling at 3s or more at 3 weeks old, and at 6 or 7s. at 6 weeks. Hogs are generally killed at the age of 8 or 10 months, being esteemed more delicate than if they were kept a longer time. They generally weigh at that age 8 or 10 stone, and sell for 40s. or 50s. They are reared here on clover, lettuce, carrot, *&c.* in summer; in winter on potatoes and yams, and are usually fed off, 2 or 3 weeks before killing, with oats or boiled beans.

Poultry. Poultry has long been a favourite article with the Scots; and particularly here, where from the vicinity to the capital, the market is so advantageous.

Geese, however, are not reared in any considerable numbers, as the demand for them is confined to particular seasons, and is never very great*. They are sold at 2s. 6d. or 3s. weighing 8 or 10 lb. The Edinburgh poultrymen frequently bring them down in harvest from Northumberland in hundreds, where they are bought at from 8d to 10d. a piece. They send them to the corn stubbles to fatten, and at the end of the season, dispose of them to the citizens for their new-year's entertainments. *Turkeys* sell at from 4s. to 6s. weighing from 8 to 14lb. and are in much request at the tables of

* The practice of plucking them periodically as in England is not used; probably the climate is too severe to admit of it, and as part of the profit is thereby lost they are bred only by the gentry and farmers; the cottagers never attempt it.

For remarks and additio
observations.

of the higher ranks, but are not reared very extensively, as they are very delicate when young, and difficult to bring up. *Ducklings* sell from 1s. to 1s. 3d. *ducks* from 1s. 6d. to 2s. the best kinds weigh from 6 to 7lb. *Fowls* (or *hens*, as they are generally called in Scotland,) are the most profitable poultry, there being a constant demand for them in the market, and also for their eggs, of which there are great quantities collected and sold. The price of fowls varies from 1s. to 2s. 3d. according to size, (some weighing 5 or 6lb. and the season.)

The money drawn yearly by the peasantry of this county for poultry and eggs cannot be less than 8000l.

TILLAGE.

The arable lands are laid out, in general, in fields or enclosures from 6 to 10 acres each; the ridges lying in the direction most suitable for carrying off the water, or in that which renders the ploughing least difficult. It was formerly the universal practice to form the land into high and broad ridges, commonly from 36 to 48 feet wide, and elevated at least 3 feet higher in the middle than in the furrows: but this mode, which was perhaps consistent enough with the heavy cumberous six-horse ploughs then employed, is now disused since the introduction of the two-horse plough, which has of late become general in this county. The common method now is, either to lay the lands into ridges of 18 feet broad, and which, on heavy soil, are alternately *gathered*, *cast*, and *cloven*, or what is becoming every day more general, into ridges of 10 feet only, which are uniformly cloven, at every operation; the furrow becoming the crown, and the crown the furrow alternately. This last mode has many advantages to recommend it. In the first place the ground itself is kept at an uniform degree of thickness, the

the soil at the furrow being equally deep with the soil in the middle. It is tilled with greater facility, as the plough has always an empty furrow to enter upon, and the danger of *balking* in the *feering*, which so readily occurs in drawing the first furrow on the crown of a high gathered ridge, is altogether obviated. It is also more economical, not only as being ploughable with more expedition, but as it forms a proper breadth for *one cast* of the sower, for three harrows to cover, and in harvest for two reapers to cut. There is thus a proper distribution in the labour, which does not so readily occur in ridges either of a greater or leſs breadth. This mode of laying out lands is not however so suited to a damp soil, or where, from flatneſs of the surface, there is a difficulty in making the rain water descend; in either of which cases, the grounds, after a wet winter, are found to be too long of getting into a proper degree of firmneſs to admit of the seed operations in the spring; so that many farmers have again brought their lands back to the 18 feet dimension of ridges, which admitting of the operation of *gathering* in the tillage, lays the ground into the requisite state of firmneſs*.

There

* Where the grounds are very steep, the ridges are sometimes directed acroſs the declivity, with merely as much slope as to allow the water to fall easily off. The advantage arising from this mode consists in two particulars; first, the operation of ploughing is more easily performed; secondly, the water running off with leſs rapidity, occasions leſs waste of soil. In laying out the ridges in this manner, it is of much importance that they point in such a direction, that the right side of the plough, in going up hill, may be to the downward, which will cause the furrow to fall over from the plough, as soon as it is separated from the firm land. Were the right side of the plough to be to the upward, the new cut furrow would always lean upon the plough, which, besides making bad work, would occasion an unneceſsary addition to the draught, in the very situation where it is naturally most difficult. It is astoniſhing that this simple distinction is not more attended to.

For remarks and additio
observations.

There are some situations in this county so very steep, (for instance in the arable hills near Gala-water), that the plough cannot operate against the declivity at all. Some people in this case use a plough with a ſhifting mould-board and culter; so that the furrow is turned to the downward both in going and coming. Others, who object to this plan because it occasions too rapid a descent of ſoil from the upper parts, where it is naturally too thin, and accumulates it upon the lower parts, where it is already too thick, cause the plough to aſcend without a furrow, and *till* the whole down the bank in a ſtraight line. They, no doubt, by this mode occaſion somewhat more labour; but I imagine they are right in their idea, that hence they do greater juſtice to the land itſelf.

In ſome parts of the moor-lands of this county the heavy plough drawn by four horſes, and ſometimes with two oxen in addition, is ſtill in uſe, with the ſtill more uncouth, high, crooked, broad ridges.

A pair of horſes, without a driver, plough in general about an Engliſh acre in a day. Oxen are very little uſed except in the moor-lands.

DRAINS.

In many tracts of this country drains form a moſt important branch of improvement; and there are but few farms where draining is not ſtill neceſsary, altho' much has already been done. The common mode is by a ditch 3 feet deep, 2½ wide at top, and 9 inches at the bottom; which is executed for about 3d. the rood of ix yards in length. This ditch is filled up half-way with ſmall round ſtones from the adjoining lands; on theſe a ſlight layer of old ſtraw is laid, to prevent the mould with which both are covered, from intermixing. The plough

paſses over them without interfering; and they are known to remain entire, and the drain to keep running, for ages. This branch of huſbandry is perfectly underſtood here; as even the common labourers can point out the place where the ditch ought to be*.

ROTATION of CROPS.

A REGULAR rotation is not to be looked for. Independent of the changeable nature of the weather, which often counteracts every ſettled plan, the very progreſs of improvement occaſions an alteration from time to time, in almoſt every department of husbandry. There is, however, a ſyſtem of management which is commonly followed, though the manner in which it is carried on muſt vary as circumſtances may require. The rule is to have alternate green and white crops; or alternately thoſe that meliorate, and thoſe that exhauſt the ſoil. The following, when the ſeaſons admit of them, are examples of rotation in this county.

1. For a rich loam.

1ſt year, ſummer fallow, without dung.
2d —— wheat.
3d —— beans and peaſe, the land dunged.
4th —— wheat.
5th —— barley, ground thrice ploughed.
6th —— clover
7th —— oats
8th —— ſummer-fallow.

2. For

* There is hardly any operation in huſbandry that pays ſo well for the expenſe as this; as not only is it accompliſhed for little money, but the ſoil thus relieved of the ſuperabundant moiſture which rendered it fit for nothing, becomes the moſt productive in the fields, for a great many years to come.—This, however, like many other improvements, has been effected ſolely by the exertions of the tenants, though the landlords undoubtedly derive the greateſt, or at leaſt the moſt permanent, advantages from it.

2. For rich heavy lands.

1st year, summer-fallow, dunged.
2d —— wheat.
3d —— oats.
4th —— beans and pease.
5th —— barley.
6th —— clover.
7th —— oats.
8th —— summer-fallow.

3. For a hilly district.

1st year, turnip, well dunged.
2d —— barley, or oats.
3d —— clover.
4th —— oats.
5th —— turnip, well dunged.

This is the rotation of Mr Brodie at Upper Keith, on a dry soil in a cold situation, and in the cultivation of which he is not excelled by any farmer in such circumstances perhaps in Great Britain. Indeed he has probably hit upon the true system for a hilly district.

4. For a dry soil.

1st year, potatoes, well dunged.
2d —— wheat.
3d —— clover.
4th —— oats.
5th —— potatoes, well dunged.

This is practised in several farms on a dry soil in the vicinity of Edinburgh.

The following was the rotation of the old school, but which has fallen into disuse.

1st year, wheat, the land dunged.
2d —— beans and pease.
3d —— barley.
4th —— oats.
5th —— wheat, the land dunged.
No summer fallow, no clover, no turnips.

This was the best system in those days, and must have still prevailed, if the landlords of former times, like some of their succeſsors, had bound down their tenants to it for ever, because it happened to be the best mode of cultivation then known.

CULTURE of the DIFFERENT CROPS.

Wheat. THERE may at present be 7000 or 8000 acres of this crop cultivated in Mid Lothian: 50 years ago there were not 1000; and still leſs at a more early period *. It is sown, 1. after summer fallow; in which the ground is generally ploughed once in winter, again in the beginning of June, and twice or thrice afterward during the summer. The last furrow is given in the end of August, leaving the land as cloddy as poſsible; the seed is sown in September, or early in October. Land naturally rich receives no manure the year that it is in fallow.— 2. After rag-faugh, that is graſs-land broken up in the summer, after the hay is cut; it is three times ploughed, and dunged. The sowing is about the same time with the former, and produces frequently as good a crop.— 3. After potatoes. This makes the best return of any, and is also better adapted to wheat than any other grain. 4. After beans or pease. In this case the ground is sometimes dunged to the wheat, and sometimes only to the crop preceding. There is more sown in this succeſsion than in any other, but the return is the most uncertain of any; being in some cases very great, and in others hardly any crop at all: depending very much on the sowing season, which is rather apt to be unfavourable, from the

* It was enacted by parliament in 1426, and again in 1457, that every man tilling with a plough of eight oxen, ſhall every year sow at the leaſt a firlot of wheat, half a firlot of pease, and 40 beans. The culture of these grains could not have been very general before these periods.

For remarks and additional observations.

e lateneſs of clearing the ground of the beans or pease
op. 5. After oats. This is now little practised; but
hen the land is in good order, and well dunged, it is as
re a crop as any, and the grain as fine. 6. After tur-
p. As it must be late in the season till this can be done,
is not at all general. Most farmers prefer a crop of
rley or oats. 7. After clover. It is only on light
nds in fine order that this is attempted with succeſs: the
ractice at any rate is not very common. Wheat is
ry seldom sown after barley, because it is always
tended with the very worst effect: for, however well
may look in the spring, it falls off almost totally be-
re it comes to the sickle. In general, if whea tbe
wn dry (what is called here *a good side*), there is no
rain cultivated with such succeſs. In the upland dis-
icts, lying 800 feet above the level of the sea, it can-
ot be raised at all.

The seed is, generally, either steeped in salt brine, and
e weak grain carefully ſkimmed off; or, it is only
prinkled with chambe -lie (stale urine) on the floor,
nd in both cases dusted with lime-powder. These pre-
autions are against smut, and are usually succeſsful; but
is found neceſsary to renew the grain from England
rom time to time, as it degenerates in a few years. In
onsequence of this frequent changing of the seed, there
an be no species peculiar to the county, though there are
erhaps all the kinds known in the island; red, white,
ellow, &c. In general the red kinds are most pro-
uctive; but the white are preferred by the bakers, par-
icularly for the second flour, of which the greatest pro-
portion of bread is made.

Wheat is, with few exceptions, sown broad-cast, from
o to 18 pecks the acre, according to the time of sowing,
he earliest requiring least seed. It is sometimes harrow-
d and rolled in the spring Some farmers aſſert these
perations to be beneficial, while others hold a contrary

opinion: for my own part, I never could perceive any difference in the crop in harvest, notwithstanding of frequent experiments to decide the question. The produce is in some instances as high as 16 bolls an acre: 10 are however esteemed a great crop, 6 are reckoned good; and in many cases it is as low as 5, or even less. At an average, I would calculate it at 7½*. Edinburgh itself consumes much more than is produced in this county: the farmers have therefore every inducement to cultivate it, that can arise from their near vicinity to such an extensive market †.

Reaping is performed by the sickle; the scythe being seldom or never applied. Most of the reapers are women, who travel chiefly from the Highlands, 100 or 200 miles for that purpose ‡. A man binds to eight reapers, who

* The wheat firlot is 2197.3 cubic inches.
The barley firlot — 3205.5 do.
Winchester bushel — 2150.4 do.
Four firlots — 1 boll

† In 1792 there were 51,467½ bolls of wheat manufactured at the Water of Leith mills, belonging to the corporation of bakers. It is supposed that in these mills two fifths of the whole flour used in the county is made: hence 128,667½ bolls of wheat will be the annual consumption. There are in Edinburgh 51 bakers; in the extended royalty and suburbs, 69; in Leith 13; and in the rest of the county about 24: in all about 157. It is calculated by the bakers themselves, that one with another they use 15 bolls of wheat weekly, or 780 bolls a year. From these data the annual consumption of wheat would appear to be 122,460 bolls, besides what is used in the starch manufacture. The coarse bread used in proportion to fine, is almost exactly as 2 to 1.

‡ Reapers are hired every morning, particularly on Mondays, at the Westport of Edinburgh, where they sometimes amount to thousands. Wages are from 6d. to 1s. a-day; and diet, which costs from 4d½ to 6d.: breakfast is oatmeal porridge, about a Scotch pint, with a mutchkin of butter-milk to each; dinner, a loaf of bread at 1s. 3d. the dozen, and half a pint of beer; supper the same as breakfast. They work from six to six, and are allowed two hours through the day for rest. The Highlanders lie in the barns at night on straw, with a few blankets and sacks distributed among them.

who generally cut two acres a-day. The ſheaves are made about 12 inches in diameter: 14 of wheat, and 12 of barley and oats, form a *ſtook* (ſhock), in which the two ſide rows, leaning together at top, are covered with two ſheaves to protect them from rain. Wheat is generally ready to be driven home in eight days, oats in a fortnight, and barley in three weeks after cutting. This laſt is ſometimes left *broad-band* (untied) for two or three days, to accelerate the *winning*; ſometimes *gaited* (tied ſlack, and ſet on end, ſheaf by ſheaf), for the ſame reaſon. In the barn-yard all corn is built in round ſtacks, from 12 to 24 feet in width, containing from 10 to 60 bolls, neatly covered with thatch, tied on handſomely with ſtraw ropes. The ſtacks are generally *ſtaled* (founded) on a layer of furze, thorns, old ſtraw, ſtones, &c. to protect the corn from damp. Some ſet them on low pillars overlaid with planks, 18 inches above ground, which ſaves them completely from vermin alſo. This mode ought to be general, but it is rather expenſive; the proprietors ſhould erect them, requiring only to tenants (whoſe capital ſhould never be ſunk in buildings) to keep them up as they do their houſes. In building the ſtacks, ſome draw a large bag, ſtuffed with ſtraw, up the centre, which leaves a kind of funnel for the vapour to eſcape, and thus prevents *heating*, or mow-burning.

Barley. This was formerly the favourite crop: received the whole manure; and was, indeed, chiefly depended on for the rent. Now, that the cultivation of wheat is carried to ſuch an extent, barley is leſs regarded; the whole dung being generally allotted to the former, or to thoſe crops which are preparative to it, while the latter is thrown back in the rotation a year or more. The quantity produced, hence, has been leſs; but the price having of late advanced conſiderably, the culture has again become of importance. This crop follows ſometimes

times wheat, sometimes beans or pease. In both cases the land is thrice ploughed: the first time soon after harvest; the second (called *stirring*) in April; the last time in May, as it is commonly sown from the 1st to the 26th of that month. And sometimes after turnips, the ground once ploughed. But as turnips are not extensively cultivated, it is but a small proportion of barley that is sown after them. There have been different species of seed introduced from England, but which always degenerate, and are later in ripening, though the grain originally is somewhat more plump and weighty. Our own, which has been long naturalized to the climate, is also more generally adapted to the soil. The Engliſh grain, however, on very rich land (which is the only case in which it ſhould be sown) as it is leſs apt to lodge, gives sometimes a greater produce.

In the moorlands, big, or square barley, with six rows, is still sown, being well adapted to the situation, as it ripens two or three weeks before the long-eared barley. The whole dung is also applied to it; wheat, its rival, not being cultivated.

There are about 12 or 14 pecks of seed sown on an acre: the produce, though in many instances 10 bolls or more, will only be, at an average, about 5½ or 6. The consumption arises from the Edinburgh brewers and distillers, who use a great deal more than this county has ever produced; besides what is made into pot-barley, which requires many thousand bolls. A firlot of good barley weighs from 72 to 80lb. Engliſh. The ground employed in barley and bear, or big, is probably still as much in quantity as at any former period; perhaps from 8000 to 10,000 acres.

Oats, are here the most generally cultivated of any grain, for the meal is still much used as the food of the people, and there is always a great demand for the corn

for

for horses: while the crop itself is adapted to every soil. They are, upon the whole, a very profitable object of husbandry. They succeed, 1. Ley, commonly with one furrow: grass-grounds are seldom broken up for any thing else. 2. Barley; once ploughed, and, on dry lands, sometimes twice. This rotation is less frequent, now that barley-land is generally laid down with grass-seeds. 3. Wheat. 4. Beans or pease. 5. Summer-fallow. Neither of these three last successions are frequent, as they are only practised when the season is unfavourable to the sowing of other grain. For the same reason they are also sometimes sown on land that has been in wheat, ploughed down. 6. Turnip, being preferred to wheat or barley; and the returns generally justify the practice.

The species of seed are, 1. Fawns. 2. Blainslie*.—These two kinds are nearly similar, are the most adapted both to the soil and climate; meal well, and although rather late in ripening, are not so backward as a 3d. kind, Halkerton, or Angus oats. These are emphatically called *dour seed*; a weighty kind, giving on rich lands a great increase, though they are too late for a cold situation. 4. Red oats, lately introduced, seem to be best adapted of any to an inclement country; for they are not only ripe two or three weeks sooner than any of the preceding, but they are not apt to be shed or shaken with the wind, as the grain has an uncommon adhesion to the straw: they meal well, and the meal is good; but the straw is not esteemed so much for cattle; and it is thought that this species exhausts the soil more than the former kinds. There are several species of early oats; as Friezeland, Poland, &c. of which the distinguishing qualities

* From the lands of Fawns and of Blainslie in Lauderdale.

lities are, that they ripen soon, easily ſhed, thrive only on a very rich ſoil, generally meal ill, but ſometimes give a great increase. Black oats are also cultivated; but seem here to have no superiority over the white kinds, to compensate for the discolour in the meal, which part of the husk, unavoidably left among it, occasions. Change of seed is understood to be of much beneſit to this as well as to other grain; and seed is accordingly renewed every third or fourth year. Even changing from one farm to another is found to be of service *.

Beans and pease are generally cultivated together. There are probably not above 6000 acres sown in the county; in the upland districts very few; and these only with pease; as beans will not come to maturity. The chief intention of this crop is to meliorate the soil, and for that purpose it commonly succeeds wheat or oats. The practice of drilling and horse-hoeing them is very general, in which case there are but a very few pease intermixed with the beans, and frequently none. Time of sowing is from February 1st to the end of March; when later, the crop is usually more luxuriant, but is more ready to be hurt from being too late in harvest. The quantity of seed is from a boll to six firlots an acre. The produce of drilled beans, in particular, is sometimes very great, 18 and even 20 bolls; but 10 bolls are very common. In broadcast the grain seldom exceeds 10 bolls, generally

* Oats are sown from the 1st of February to the middle of April, at about a boll the acre. The produce very unequal: in many cases 15 or 16 bolls an acre; 10 are very frequent; but as a great proportion is raised on lands exhausted so as not to be able to carry any other grain, the produce is often less than 4. There may be from 15,000 to 20,000 acres sown in the county. Oats of ordinary quality weigh from 56 to 60lb. the firlot; some as high as 68. They are reckoned good that give in meal 15 pecks, and pay the multure, which is a peck of meal for the boll of oats. Some oats have given 18 pecks the boll, besides multure.

For remarks and additions observations:

enerally much leſs; but the straw, which sells readily n the market, is often worth 5l. the acre; seldom leſs nan 50s. It sells from 4s. to 8s. the kemple, of about 4 stone, Tron weight. There is a kind of early pea own here (called *Hasting*, and sometimes *Peebles* pea) s late as the end of April, and is usually ready in harest before the common kind, which is sown a month oner: it is, however, uncertain in the produce; growng in some cases all to straw, and in others fails in the raw altogether. Very abundant returns are, however, ometimes got.

Rye. There are perhaps not 50 acres cultivated in the hole county. It is generally disliked in bread; and ll of late, that the distillers take it at a low price, there as no other market. It is much the aversion of poultry; ey even avoid the place where it grows; it is therefore ometimes sown in head-ridges around the farm-houses nd yards, as a protection to the other grain. As the hatch is excellent which is made of the straw, and the rain, in general, very abundant on rich light lands where wheat would be liable to lodge and come to nohing), it may be cultivated, even here, with propriety, lthough it ſhould sell at a low rate.

Potatoes, were first cultivated in the fields here about he year 1744; they had not been long introduced, even nto gardens, before that time. They are now in every arm; but few are raised for sale above six miles from dinburgh, or other towns, the expense attending their arriage being too great to admit of bringing them from farther distance. There may be from 1200 to 1500 cres, which produce at an average 30 bolls each *, or from

* The original measure here was the bear firlot, of which 4 to the boll ide about 18 stone weight It has since increased to 28 stone or more. It to be regretted that there is no fixed or legal standard: the measure potatoes

from 36,000 to 45,000 in all, chiefly for the supply of the capital and the neighbouring towns, besides some imported at Leith from other places.

The mode of culture is uniformly in drills, from 18 inches to 4 feet distant from one another, and from 9 inches to 12, plant from plant, in the row. The dung is in some cases, spread over the whole field; in others, it is confined to the rows: and sometimes is applied to the preceding crop, which is thought to make the best eating potatoes, although rather less in quantity. Seed is sometimes raised from the apple, which requires two years to accomplish; the first producing them only as large as nuts: but they are found more prolifick, and generally of many kinds from the same apple. The *kidney* potatoe is esteemed the best; but requires the richest soil; and in that case is more prolifick than any other, whereas on poor land it will hardly grow at all. The disease of *curling* has been remarked here for several years; but there is no other preventative known but that of changing the seed, by getting it from the neighbouring counties, where that distemper has not yet made its appearance, and which is accordingly done almost every year.

Potatoes are planted generally in April, and sometimes as late as the 1st of June. The ground is previously well pulverized by frequent tillage; and it is always the dryest soil that is chosen, without regard to the preceding crop. There are early kinds that are ready for the market by the end of July; but it is commonly October before the later sorts are taken up and housed. It is remarked, in general, that the earliest planted make the best or most *mealy*

tatoes are now sold by, being used merely from private paction between the parties. They ought to be sold by weight, the heap given above the wood in measuring, being very variable.

For remarks and additional observations.

meally potatoes; but they are more liable to be curled and always leſs prolific. Those planted late, are *watery*; but the crop is more abundant, and the curl seldom appears.

Yams, a coarse kind of potatoes, give the greatest produce of any, particularly the red, of which 12 tons an acre is a common return. They are chiefly for milch cows, increasing the produce without affecting the quality or taste of the milk. They grow on poor soil, even more abundantly than on rich, (where they are apt to run too much to stem, and to be leſs productive at the root,) and from the constant verdure which they retain to the latest period of the season, they enrich the ground little leſs than a crop of turnip itself. The white yam, is a finer species, but a leſs luxuriant crop. It is sometimes imposed on the public for a large kidney potatoe, to which it has a resemblance in colour and ſhape, but is the very reverse in point of quality. Both these species, lately introduced, are treated in the cultivation like potatoes, and similar to them are also excellent preparations for a wheat crop.

Turnip, is not so generally cultivated as it ought to be, particularly in the extremities of the county, where there is no excuse for not feeding cattle. The practice has, however, increased much of late, and it is probable will soon become more extensive, as the returns are so very lucrative. From 6l. to 10 l. the acre is given by the Edinburgh butchers and others, besides the advantages of consuming them on the ground, thereby producing an excellent fund of enriching manure. *Ruta-baga*, or Swediſh turnip, was introduced lately, and thrives well. It is, perhaps, not so beneficial in some respects as the common turnip, but as it admits of being trans-

planted with advantage, it is surely an object of attention to the turnip farmers, as by means of it, they can fill up any vacancies in the drills of the common kind, with very little expense, which is hardly practicable by any other means. Even where the turnip fails altogether as by the fly or slugs, the crop can be more readily renewed from a seed bed of ruta-baga, than from re-sowing the field, which seldom comes to much good.

Mangel-wurzel, or root of scarcity, so much vaunted, of late, has now altogether gone into disuse, being found unprofitable; although it grew luxuriantly and with very little culture. *Carrot*, when cattle feeding becomes as much an object with the husbandmen here, as it ought to be, will be esteemed a very valuable root, and much cultivated. The fact is established, that it thrives well, and that heavy crops of it can be obtained. The sale for it in the Edinburgh market, is too limited, to encourage an extensive cultivation. *Parsnip* is in a still worse state, there being almost no sale for it at all.

Cabbage is cultivated here on heavy lands with great success, but there is no demand for it. It is from cattle-feeding only that it will be raised to any extent. *Open kail* (coleworts), are universally cultivated, even in every cottager's garden (hence called *kail-yard*); and have been known to thrive on the same spot for ages, owing perhaps to their perpetual verdure, so enriching to the soil. In the fields they flourish most luxuriantly; far surpassing cabbages, requiring much less manure, and almost no attention. They are exceedingly less liable to be hurt by frost than the former, while cattle eat them with great avidity. There indeed appears to be no vegetable more congenial to the soil and climate than this; and the time is perhaps not far distant, when it will be cultivated to great extent.

For remarks and additional observations.

Flax grows well in many places, but is not extensively cultivated, for want of proper hands to prepare and dreſs it for the manufacturer. *Hemp* is raised in ſtill leſs quantity, there hardly being a ſingle perſon that even pretends to manage it. Sometimes, however, it is propagated out of curioſity, and from every ſpecimen that has appeared, there is not a doubt of it ſucceeding as a crop. Were the mode of preparing it underſtood here, it would prove a valuable acquiſition to the huſbandman. But this, as well as the management of flax, ſhould be a profeſſion by itſelf; leaving to the farmers merely the cultivation of the ſoil, and improvement of the plant.

Artificial graſſes. The chief of theſe, red clover, although known here above 60 years, has not been very generally cultivated above 30. There has, however, been no plant yet introduced into this country ſo beneficial, whether conſidered with regard to its value as a graſs, or to its fertilizing effect upon the ſoil. When firſt introduced, its cultivation was limited, and ſcarcely ſupplied, the home conſumption on the farm, but it was gradually afterwards extended, along with *rye graſs*, in the view of raiſing hay for the Edinburgh market, and has now for ſeveral years occupied more land in the low part of the county, than any other ſpecies of crop whatever. There are at leaſt 10.000 acres under ſown graſs within 7 miles of town, and perhaps as many in the more remote parts of the county.

Red clover is mixed with rye graſs, on account of the hay, which it is ſuppoſed would be too coarſe if it conſiſted wholly of the former. It is commonly ſown among barley in May, ſometimes alſo among wheat and oats in April, and at times by itſelf on ſummer fallow in

in July, coming in as a crop the year following. In all cases, care is taken to have the ground well pulverized, the stones carried off, and the whole finiſhed neatly with the roller. There is sown a buſhel of rye graſs seed, and from 12 to 24lb. of clover, to an acre, in proportion to the nature of the soil, the lightest requiring least seed.

In the vicinity of Edinburgh, and other towns, a considerable proportion of this crop is consumed green, fetching from 6l. to 8l. an acre the first cutting. There is every where a part of it used in that way by the farm cattle, but much the greatest proportion is converted into hay, in making which, the rule is, to preserve the sap as much as poſsible. For this purpose it is put into ricks, containing from 40 to 60 stone weight, in two or three days after it is cut. The produce is from 150 to 300 stones an acre: expense of mowing from 1s. 8d. to 3s. 6d, and the making (if made in dry weather) from 1s. to 1s. 6d. being only once turned in the swath, and often not at all. In about two or three weeks after, it is collected into *sows* (long stacks), containing sometimes 10,000 stone. These are very rarely hurt by *beating*, and there is almost no example of their having taken fire *.

Yellow

* The price varies much in different seasons; being some years at 3d. and in others at 1s. the stone (22lb.), according to the crop, in the neighbourhood, on which it entirely depends, without being at all affected by foreign demands. In the distant parts of the county it is common to thraſh the hay for the rye-graſs seed, which sells here from 1s. 6d. to 2s 6d. a buſhel. From 20 to 40 are got from an acre The hay in this case sells commonly at 1d. the stone cheaper; being particularly disliked by stable-keepers and grooms, who rather wiſh to save the seed themselves, for the purpose of selling it.

Yellow clover, is sometimes mixed with red, and never fails to prosper; but horses are not fond of it: and giving no second crop *, the cultivation is not so extensive as that of the other. White clover is always sown for pasture, and thrives well. It is indeed so natural to the soil, that some people are hence induced to sow it thin, trusting that it will in time become abundant. It seems, however, to be much better husbandry, to insure at first a liberal quantity, by sowing it thick: the saving of seed is a mere trifle compared with the deficiency in the produce of even a single season. The lands kept in pasture, in the low part of the county, are few in proportion to those in tillage, or in hay; they are usually tilled up after a few years, in order to renew the grasses, which are apt to be eradicated by the fog; or, rather, to obtain a better crop of corn, which is here the principal object of husbandry.

Tares, as green food for horses, are cultivated on a small scale in almost every farm, the intention being merely to preserve a succession of succulent food between the first and second cuttings of the clover, in case the last should be retarded, or fail, as sometimes happens in a dry season. A winter species of these, sown in autumn, and ready to cut before the clover, is in a few instances propagated. Should it answer this intention, there can be no doubt that it will soon become a general practice.

* Even red clover seldom now produces a second crop, though at first it was not uncommon to cut it thrice in a season, and it always stood two years at the least; but of late it fails in this last respect also; probably owing to the frequent repeating it on the same land: for it may be remarked, that it still grows more luxuriantly on land to which it is new, than on that to which it has been long accustomed.

WOODLANDS.

THERE may be, perhaps, about 5000 acres occupied by natural wood and plantations, of which the last are by far the greatest proportion, the first being only found on the banks of a few of the rivulets; the second are to be met with around every gentleman's seat in the county. The following are the principal kinds cultivated. Oak, in many places is very flouriſhing. Elm and aſh never fail to thrive; and, as well as oak, find a very ready ſale. Beech and plane trees are the most luxuriant in growth, but are not much valued as timber. The Scotch fir is much cultivated, but to very little purpose; for it neither grows large, nor is the wood much esteemed. The larix seems to succeed best of the fir kind; next to it the silver fir; but the spruce fir does not thrive at all, becomes soon stunted, and is even worth leſs than the common fir itself. It may, in general, be remarked, that over the whole county, forest trees, planted in hedge-rows, come to no good. The rows planted together are too few, by which they periſh merely for want of ſhelter; for the same kinds, on similar soil, when planted thicker, thrive well enough. A thin belt, of four or five rows, will not stand the climate here; there ſhould be 20 rows at the least*.

TABLE

* The planting of forest trees cannot be too much encouraged in this country; not only on account of the timber, which is every day growing more valuable, being advanced in price 40 per cent. within the last ten years, but also from the great ſhelter which they afford to the surrounding lands. The operation of the law is, however, in some degree against it, by debarring the tenants from the profit of the woods they may have planted themselves, which they neither are allowed to cut down again, nor entitled to the value at the end of their leases. Many waste corners would long since have been planted by them, had it not been for this prohibitory regulation.

TABLE of the Mid Lothian Fiars (or medium prices) of the best kinds of grain, and of oat meal, the Lothian boll, from 10 years to 10 years, from 1645 to 1791, inclusive.

Years.	Wheat.						Barley.						Oats.						Oatmeal.						Pease.					
	H		M		L		H		M		L		H		M		L		H		M		L		H		M		L	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
1655	22	2	17		7	6	18	4	13	9½	7	9	16	8	11	9½	4	5	18	4	13	3	5	6	18	4	12	1	3	4
65	18	4	14	7	11	1	15		11	3½	8	5	10	10	8		5	6	12	6	8	8	6	8	9	5	7		4	5
75	20	6	12	4	9	2	16	1	10	10	9	2	13	10	7	10½	5	6	15	6	8	10½	6	8	18	4	7	7½	5	3
85	18	4	13	4	10	4	20		11	9	9	4	13		7	7½	5	10	13	4	8	2½	6	8	14	2	7	10	5	
95	15		12	2½	9	4	14	5	10	6	9	6	11	3	7	9½	6	8	11	4	8	1½	6	11	13	2	8	7	6	
1705	28	4	17	6½	11	8	22	2	15	4	10	6	20		12		6	11	22		13	4½	8		21	8	10		5	3
15	21	1	14	2½	8	10	14	7	11	6½	8	6	12	6	8	8	5	6	14	2	10		6	8	13	4	8	7	4	8
25	14	5	12	6	10	4	13	9	11	1	9	6	10	8	9	1	7	9	11	6	10		8	4	11	8	8	4	5	6
35	16	8	14		10	6	15		10	11	8	9	11	4	8	10½	7	5	12	4	10	1½	8	4	11		7	6	5	4
45	22	1	12	2½	10		17	8	12	2	9	4	14	6	9	3½	6	6	17		10	10½	7	6	20		7	6	6	
55	17	8	14	6	12	8	14		11	7½	10	5	12		9	10	7	8	13	8	10	10½	8	8	13		9	2½	6	8
65	22		16	6	13	4	16	8	12	6	10	3	15		10	11½	8		16	8	12	2½	8	8	16	8	11	10½	6	
75	22	6	20	4½	18		17	6	15	4½	11	9	14	8	13	3½	10		16	8	15	½	12		15		13	2½	11	
85	25		19	6½	14	6	21		14	8½	11	3	17		11	8	9		21		13	7	10		17		11	4½	8	
1791	23	11½	21	7	19	6	18	3	15	9	13	6	14	4½	12	10½	10	6	16	6	14	5	12		16		12	10½	10	

Columns H show the highest rate of the best fiars; columns M, the average rate of the best fiars; and columns L, the lowest rate of the best fiars, for each period of 10 years preceding the respective dates in the column of years, except the last period, ending at 1791, which is for 7 years only.

The fiars are settled every year in March, by a jury of 8 landed gentlemen and 7 traders, summoned by the sheriff for that purpose. Much wheat and barley are sold by reference to these medium prices, but in the low part of the county it is usual to get at least 5 per cent. above them *.

* The 1st corn-act for Scotland was passed in 1663; by which it was lawful to export wheat when under 20s. bear 13s. 4d. oats and pease 8s. 10⅔d. Sterling the boll. The 1st bounty on exportation was allowed in 1695, being 10 merks Scots (8s. 10⅔d. Sterling) the chalder, or 16 bolls. The rate of labour, only 40 years ago, was not a half of what it is at present: and it is probable, that 150 years since, it was not a third part. The rent of land prior to 1650 was not a fourth part of what it is now, (see Mr Wood's Annals of Cramond Parish, just publishing); from all which it must appear, that both the rent of land, and the rate of labour have increased much more in proportion than the price of corn.

MISCELLANEOUS OBSERVATIONS.

FARMER SOCIETY. A very respectable farmer society, that of Dalkeith, was instituted in this county about 35 years ago, for the prosecution of thieves, &c. In addition to this, it has become a society in which the various circumstances connected with agriculture are the subjects of discuſsion. The expense attending this aſsociation is very small; being sixpence on the ploughgate yearly, collected by one farmer in each pariſh, who takes that trouble in rotation, as also that of representing the pariſh at the general meeting held on the first thursday of each month at Dalkeith. Twenty pariſhes have now joined in this society. The annual contributions amount to about 30l. and the stock at present is about 120l. which is found fully adequate to the purposes of the institution, for whether it be owing to the ideas entertained of the power of the society, as fully able to prosecute, or whether it be conceived that a society is more unrelenting and inexorable, (which in fact it always is,) than an individual, it has come to paſs, that robberies and petty thefts, are much leſs frequent than formerly, so that but few demands are now made on the funds for the prosecuting of offenders. The society keeps a clerk to make a regular register of the transactions, whose salary arises from fines imposed on absent members *.

As

* In extraordinary cases the annual contribution has been doubled, in order that the funds might be equal to the demand upon them, as it lately happened when a horse stealer in this county was pursued into Yorkſhire, where he was capitally convicted, and the horse recovered by the owner, who was sent after him along with other witneſses at the expense of this society.

As at this club, farmers from every part of the county attend. the influence which it must have, in extending the knowledge of improvements in husbandry, cannot but be great. In fact many farmers go thither on the days of publick meeting, with the expreſs view of getting intelligence upon the subject of agriculture at large. It was also through the medium of the Dalkeith farmer society, that the united voice of the farmers in this county was publickly announced, declaring their respect and veneration for the constitution of the Britiſh government, as now establiſhed, and their marked abhorrence of those principles of anarchy and licentiousneſs, which were very lately attempted to be imposed upon this country*.

Taxes or public burdens. Almost none of these affect the tenantry. The clergy are paid from fixed and determined funds, so that no dispute can arise on that subject. The poor are maintained by voluntary contributions, except in a single pariſh, where there is an aſſeſsment for their supply, of from 4d. to 8d. in the pound rent, on proprietors and tenants in equal proportion. The Bridewell annual aſſeſsment, though exceſsively disproportionate, (the tenant paying as much for a ploughgate as the laird for his whole estate) is a mere trifle, being only

O

* The farmers in this county have long had in contemplation, to get instituted by legal authority, a society for the creation and management of a provisionary fund for the widows and orphans of farmers, on principles similar to those which govern the widow's fund of the ministers of the church of Scotland. That however has not yet been brought to maturity, although an ingenious scheme for the purpose, publiſhed by the present Sir James Foulis of Collington met with great approbation, It is still to be hoped, that this object will be obtained, as well as that some proper bond of union may be cemented among huſbandmen in general, to enable them to withstand the illegal extension of borough privileges, or corporation claims, which individuals, single and unsupported, cannot resist.

ly a ſhilling the ploughgate, or 1s. the houſe. Of government taxes, none affect the tenant, but ſuch as are laid on during the currency of his leaſe; at the commencement he always accommodates himſelf to them, in his propoſal of rent, giving no more than he thinks he can afford, after paying taxes and every thing elſe.

Fuel. Pit-coal is chiefly uſed, there being inexhauſtible ſeams of it, in different parts of the county, particularly for five miles around Dalkeith. In ſome places of the moorlands, peat and turf are the principal fuel, being had in great abundance in the neighbouring moſſes *.

Obſtacles to improvement. The *game laws*, as they now ſtand, are productive of much injury to the farmers, not from the quantity of game, which is inconſiderable, but from the frequent and violent treſpaſſes committed on their property, by ſportſmen, who pay little or no regard to fences, ſtock, or crop. Were partridge ſhooting put back to the 20th of September (it was once prohibited before the term of Michaelmas by an act in 1555), inſtead of the 1ſt, as at preſent, the greater part of the corns would then be reaped, and a good deal of damage would be prevented.

Pigeons have long been a grievance, on account of the vaſt deſtruction they make among the wheat, in the filling ſeaſon. On the other hand it is alleged, and I believe with reaſon, that they are very beneficial to the farmers in the winter, by picking up the ſeeds of weeds from off the lands. This matter might be compromiſed between the parties, by allowing the pigeons the free uſe of all the

* The quantity of coal uſed by the common labourers is about ¾ of a ton for each ſoul in the family yearly. by farmers about two ton, and in families of the higheſt rank about ſix ton. The price at the pit is from 5s. to 7s 6d. the ton, according to its vicinity to Edinburgh. The quantity uſed in the county will be at leaſt 200,000 ton yearly, part of which comes by ſea, but an equal quantity to that, goes from this ſhire to the more inland counties on the ſouth.

For remarks and additional observations.

the fields, except at the time that the wheat is ripening, or still remaining in the field. I am fully convinced, that, in this county, there are annually 1000 bolls of wheat destroyed by pigeons, in the filling season alone; while all the profit arising from them to their owners, does not amount to half that value, the whole year round.

Dogs. The greatest hardship of all, is the almost impracticability of keeping sheep in the vicinity of Edinburgh, as they are so liable to be destroyed by the ravenous troops of dogs, which are so frequently sallying out upon them from the town, often killing scores at a time. Several excellent decisions, however, on this subject, have lately been given here, by which the owners are found liable in the whole damage their dogs occasion. This evil, notwithstanding, still exists in a great degree, either from the culpable inattention of the owners to the maintenance of their dogs, or from the restless disposition of the creatures themselves, chiefly spaniels; which being accustomed in the shooting season, to tread through the corns with their masters in the fields, return of themselves when the season of hunting is over, to attack the sheep on the same grounds *.

Vermin. The brown rat is becoming more and more prevalent, while the black species seems to be on the decline. We have many *infallible powders* for their destruction, but the circumstance against this infallibility is, the utter aversion which the rats have to take them.

Plain

* The multitude of dogs of all kinds that are kept in Edinburgh, and in the vicinity, is a nuisance of great magnitude. The roads are completely infested with them, and many accidents, and much trouble, arise to travellers on that account. There are probably not less than 6000 in the county, two thirds of which could be very well spared. A small tax on each would bring about this diminution; while the breed of the remainder would itself be improved.

Plain arsenick is more to their taste, and will as effectually destroy them.

Weeds. Of these there are, perhaps, more than are to be met with in any other district in Scotland; probably from being so near to the metropolis, from which the seeds are readily circulated in the street dung carried to the country; which, besides, makes the soil thereby so much enriched, as to raise them in greater luxuriancy. The kinds most prevalent are, the skeldrick, in all its varieties, of wild radish, wild mustard, &c. the thistle, the dock-weed, and couch-grass, called here *wreck*. The destruction of these, and of many others, with which the fields are infested, may be looked for from summer fallowing and drill-cropping; which are becoming more frequent, from year to year, in every district of the county.

HINTS FOR IMPROVEMENT.

BESIDES the suggestions already offered in the foregoing paper, it may be observed that one great improvement to be made in this county, would be to complete the enclosing of lands. At present, not one half of the grounds are in that state, and of those that are, not a half of the closes are fencible; many of the quick fences indeed, have yet hardly had time to come to maturity, so recent has been the practice of enclosing. This most effective scheme of melioration, should be wholly executed by the proprietors, whose capital can never be better employed than in increasing the value of the lands of which they are possessed. The capital of the farmers ought never to be diverted from its natural destination, nor their attention distracted from the proper objects of their pro-

For remarks and additional observations.

feſsion, namely, the cultivation of the ſoil, and the improvement of the ſtock in their poſſeſsion. Were the landlords themſelves to undertake the whole buſineſs of enclosing, they might ſecurely truſt their being amply recompenſed by the riſe in their rents that would naturally follow. That would clearly point out the value of the improvement, and, without cauſing the leaſt murmur, would, in all probability repay their expences ſooner, than any rate of intereſt they can with moderation propoſe. Were the whole of this county completely enclosed, and ſubdivided into cloſes of a moderate dimenſion, the produce could not fail to be greatly augmented both in the low country, where corn is the principal object, and in the upland diſtricts, where the rearing of cattle, and the feeding of flocks are more attended to. The advantages of enclosing are great, both becauſe diſtinct diviſions of land afford an opportunity of arranging particular ſoils according to their peculiar qualities, and becauſe the fertility of the whole is increaſed, by the warmth and ſhelter ariſing from the hedges and fences themſelves. From enclosing alone, I am convinced, that the produce of the county, would be augmented one third, and the rent increaſed in a ſtill greater proportion *.

Another great improvement may be made by completely draining the ſoil: not only by laying dry the ſeveral bogs or ſwamps which ſtill remain, but alſo by thoroughly leading off the numerous veins of underwater that are to be met with in many diſtricts, in every farm, and almoſt in every field. In this important branch of huſbandry, the landlords have hitherto done nothing, leaving to their

* I know an inſtance where land enclosed lets at 50s. the acre, while the adjoining ground, equally good in quality, will not give more than 15s. but it may be obſerved, that it is in the remote parts of the county that enclosing becomes ſo highly beneficial, from its ſcarcity.

tenants the whole care and expence of the operation, and who very naturally proportion their exertions, to the leſs permanent intereſt they have in the ſubject *. Allow the tenants the expenſe of the drains at the end of their leaſes, and the landlords will find, for very little coſt, their grounds, in this reſpect, highly improved.

Farther, although we have already many plants, well adapted to the ſoil and the climate, (though ſome of them are but little attended to), yet ſome *new ſpecies* might be introduced, which would have a very beneficial effect. The great want we labour under at preſent, is a ſcarcity of green food for cattle in the end of the ſpring. Turnips have prolonged the uſe of ſucculent food for four or five months, giving a greater ſupply in March and April, than was formerly to be had in October and November. Clover, beſides being more juicy, has come in a full month ſooner than the cut-raſs formerly, but ſtill a proportion of the year is left deficient in green crop. Turnip fails in April, and clover gives but little aid (even in paſture) before June. It would be of vaſt importance to fill up this blank. For the feeding of ſheep, and even horned cattle, a conſiderable ſupply can be had. Rape is known to grow here luxuriantly; ſtands the ſeverest winters, even when the common colewort, the hardieſt of our culinary plants, has failed. It comes in as a green food, preciſely where the turnip ends. Why may it not be ſown in autumn after an early ſtubble? The expenſe of ſeed does not exceed 3s. the acre, and it can be diſpoſed of by feeding, in time enough to let barley be ſown in ſucceſſion:

† I lately ſaw a drain filled up with looſe thorns, laid carelеſsly in, and the mould hurdled upon them, without any intervening covering, to prevent a mixture. The tenant had only one crop to take, and it was of little importance to him, that the drain ſhould become uſeleſs in a month after he left the ground.

For remarks and additio
observations.

ucceſſion: even were it to remain on the ground till June, turnip might ſucceed, ſo that no crop would be loſt. Winter tares may perhaps afford a ſimilar relief to horſes: if they could be cut even a fortnight only before clover, they would be a great acquiſition; and as they can be ſucceeded by turnip, neither would a crop be thereby loſt. Other plants may be ſtill brought in aid to accompliſh this great object: 60 years ago, the cultivation of clover, potatoes, and turnip, which now make ſuch a diſtinguiſhed appearance in our huſbandry, were as little thought about, and ſtill leſs known.

Lastly, the *breed of animals* has by no means been ſtudied in this county, nor, it ſhould ſeem, in Scotland at large, with that zeal and diſcriminating accuracy by which the ſiſter kingdom to the ſouth has been diſtinguiſhed. Yet, although that enthuſiaſm which animates the Engliſh huſbandman in this branch of his profeſſion, may not be looked for among the farmers here, a greater application to the rearing of cattle, particularly draught horſes and milch-cows, would not be incompatible with their other intereſts. They might at leaſt, in breeding, ſelect the beſt of each ſpecies they are already poſſeſſed of, and from them raiſe a ſtock within the bounds of the county, ſufficient to ſupply themſelves, in place of ſending for cattle to a diſtance, or obtaining them, as at preſent, by an undiſtinguiſhed propagation from the few they rear at home. The cheviot ſheep, in point of hardineſs, ſize, and wool, ſhould be cultivated in moſt, if not, in all the hilly parts of Scotland. Yet theſe, there is reaſon to believe, have been brought to the preſent pitch of excellence, not ſo much from any peculiar quality in the kind itſelf, or in the walks on which they range, as from the continued attention of the farmers, to rear only from the beſt of their flocks, and to preſerve theſe from being contaminated by others of a leſſer degree of perfection.

A judicious croſsing may accelerate any desired quality in a breed: The climate or the soil may retard or promote improvement: But in the breeding of animals, as in the production of plants, much depends on the aſsiduity, the judgment, and the genius of the huſbandman himself.

POSTSCRIPT.

IN Mid Lothian the dairy is conducted on a small scale; yet, as a description of the practice common there, may have its use, the following authentic statements of it are subjoined.

Case 1. A gentlewoman in the vicinity of Edinburgh, who has been much accustomed to the management of a dairy, states, that ſhe has always been used to churn the whole milk in a plunge churn, with a *swee* (a lever applied to the end of the churn-staff), which ſhe thinks is much preferable, on account of its greatly facilitating the operation. In warm weather the milk is fit for churning in 48 hours, keeping it from the churn till it is cool; but in cold weather it must be put in warm, to make it thicken sooner; for it is not fit to be churned till it is thick, and in great cold, it is even neceſsary to set it in a warm place, to promote the coagulation, as the sooner this is accompliſhed, both the butter and the butter-milk are the better; for when the milk is long kept, it contracts a disagreeable rancid taste: on which account, chiefly, ſhe prefers churning the *whole milk*; for in making butter from *cream*, the milk must be kept long, in order to obtain all the cream from it: but whether churning milk or cream be most profitable, is not yet aſcertained in this neighbourhood; though it is held, that the milk-butter is most palatable, at least will keep much longer

For remarks and additional observations.

reet. In warm weather, cold water is put in during e operation of churning; and in cold weather, boiling ater in proportion to the degree; but in temperate eather none at all. It ge erally takes from one to two urs to churn; but that depends much on the tempera- re of the milk, for if it is either too warm or too cold, requires a longer time. As to the quantity of butter om the milk, it is not easily determined, as the milk cows differs so much in quality. It is generally ob- rved, however, that the milk of those cows which give ost, is the worst in quality; but that is not always the se, for ſhe has had cows that gave very little milk, and at very bad, and others that gave a great deal, and very od in quality: in particular, one cow that yielded be- ween 17 and 18 Scotch pints (from 8 to 9 Engliſh gallons) milk in a day, and from that quantity produced two ounds (22 oz. each) of butter, which ſhe thinks is more an the average, for the common computation is about or 11 Scotch pints to the pound of butter.

Case 2. A gentleman who had tried an experiment, order to know whether it was most profitable to churn e whole milk, or only the cream which the milk pro- uces, states, that he had a favourite cow that gave 18 cotch pints of milk a day, of a seemingly rich quality, om its cream-like appearance; that he caused one day's ilk to be churned by itself, which produced only three urths of a pound of butter: That he afterwards caused e cream of two day's milk to be collected, and from that e had 3lb. 2 oz. of butter; from which remarkable dis- arity he is decidedly of opinion, that it is much more rofitable to collect the cream and churn it, than to churn e whole milk together. He thinks also that cream- utter is much richer than the butter got from the whole ilk, which seems indeed to be pretty generally acknow- dged. On the other hand, he owns that it will not

keep so long sweet; which arises, perhaps, from the very circumstance of being more oleaginous, and hence more apt to corrupt. Respecting, however, the above experiment, in further explanation of the circumstances, it appears that the one day's milk was collected from the noon of one day, to the morning of the next, then immediately churned; whereas the two days cream was collected on a Thursday and Friday, and remained to ripen to the Monday following before it underwent that operation, which may perhaps account in a great degree for the difference in the produce.

Case, 3. A considerable farmer in the neighbourhood of Town, states, that he uses a patent churn, which holds 40 Scotch pints (20 gallons English), but in which only 24 pints can be churned at a time: That it is milk, not cream, that he churns; which is prepared by being put, when warm from the cow, into an earthen pan to cool, and then turned over into a deep wooden vessel, to remain until it acquires a sufficient degree of acidity and thickness: and from 24 pints of milk there are commonly 3 lb. (22 oz each) of butter, and sometimes more. He is of opinion, that the butter is somewhat poorer that is obtained by this mode of churning; for this reason, that the operation being quicker, and more violent than in the common plunge churn (being performed in an hour, the other generally takes two), it has the effect to produce a greater quantity of butter, leaving the milk quite exhausted, and very poor in quality; that substance which might remain amongst the butter-milk being, by this means, converted into butter; and being the poorest part of the composition, tends to make the butter itself less rich than it would otherwise be; although, on the other hand, the quantity he thinks is greatly augmented.

For remarks and additional observations.

Case 4. In my own dairy (if the management of three or four cows deserves the appellation), the cows are milked in summer thrice a-day; in the morning, at noon, and in the evening. Each milking is kept by itself, in flat wooden veſsels, to cool till the next milking, when it is poured into the churn, the succeeding milk taking its place in the flat veſsels, to cool in like manner; and thus in succeſsion for two or three days, according to the temperature of the air; the milk thickening, and thence is fit for churning soonest in the warmest weather. The quantity of butter is generally in proportion of a pound (22 oz.) for each ten pints, or 5 Engliſh gallons of milk. In winter the cows are milked only twice a-day, and the milk is put into the churn warm from the cow, where it stands a day or two longer than in summer, before it becomes sufficiently thick; although, to promote the coagulation, it is brought sometimes near to the kitchen fire, particularly on the preceding night before it is churned: and in intense cold it becomes also neceſsary to add a small quantity of boiling water. The operation of churning is performed, with the plunge churn, in from two to three hours, for 30 or 40 pints of milk; and at the last stage of the proceſs, a little cold water thrown in, has the effect to promote the separation of the butter from the milk, making it to adhere more closely together. In all the operations it is understood to be of great moment to attend to the cleanlineſs of the different veſsels employed; they are therefore carefully rinsed from time to time, and endeavoured to be preserved in all poſsible purity.

It is singular that the best mode of making butter ſhould not yet have been decidedly ascertained, and it will probably require a variety of careful experiments, under the

the direction of the Board of Agriculture, before this important art can be brought to perfection..*

Before concluding this important subject, the attention of the reader is particulary requested, to the following observations, respecting the advantages of feeding milch cows in the house, in preference to keeping them out of doors, being the substance of a paper sent by Baron d'Alten, an intelligent Hanoverian nobleman, to the Board of Agriculture.

The Baron remarks that milch cows are infinitely more profitable, kept in the house, than out of doors, but they must be early trained to it, otherwise they do not thrive.

The best kinds of food for them, are, clover, lucerne, potatoes or yams, turnips, carrots, honey-grafs (a German grafs not known in England,) cabbages, pease and beans.

Such cows as those in the neighbourhood of London, kept in the house, and properly fed, ought to yield 9 Engliſh gallons (18 Scotch pints) per day, for the firſt 4 months after calving. Afterwards the quantity will become leſs and leſs.

But on the ſuppoſition, that ſuch cows, yield at an average, only 6 gallons for 9 months, or 252 days, that at 6d. per gallon produces 3s. per day, or in 9 months, L. 37 : 16 : 0.

If, from any circumſtance, the milk cannot be ſold freſh, the profit will be much leſs, but is ſtill very conſiderable. Each 5 gallons Engliſh (10 Scotch pints) of milk ſhould produce a pound of butter. Hence, in all, 302 lib. worth, at 1s. per lb. L. 15 : 2s. The butter milk, for the purpoſe

* If a gentle warmth is neceſſary for thickening the milk, perhaps the boilers made of wood, invented at London ſome years ago, by a native of Germany, might anſwer the purpoſe. In ſome places a miſerable kind of butter is made from whey, but that practice is not known in Mid Lothian.

For remarks and additiona observations.

urpose of fattening swine, ſhould be worth L.7: 11.
'otal L 22: 13: 0.

An Engliſh acre, of a middling ſoil, ſhould produce ,000 lib. weight of green, or 5000 lib. of dry clo- er.

A large cow requires 120 lib of green, and 27½ lib. of ry clover per day, consequently in 265 days 40, 150 lib. r, a trifle more than the produce of two acres. Where- s the same cow, fed entirely out of doors, summer and inter, would require the pasture of 4 acres, the ground ould be injured by being poached by their feet, the raſs hurt by being bruised instead of cut, and the ma- ure would not be half so useful.

According to the first calculation, each acre ſhould pro- uce in milk L. 18: 18; and by the 2d, (in butter and but- r milk) L. 11: 6: 6, besides the value of the ma- ure.

It has been found, that currying cattle, fed within doors, nd keeping them as cleanly as horses in a stable, is at- ended with the best consequences, both in regard to the ilk they yield, and the rapid improvement of the car- ase.

*** Since finiſhing this survey, a plough of a singular ut simple construction, invented by the Rev. Mr Alex- nder Campbell, minister of Kilcalmonell in Kintyre, as been tried in this county. The chief improvement ade on this plough, is to obviate the inconveniency, o which all others are liable, that of being choaked by tubble, &c. accumulating between the culter and the eam. In it the culter is removed altogether, its office be- ng performed by a *feather* projecting ten or twelve inches pward from the land side of the sock (or ſhare) on the ame angle, and nearly in the same position, in which the

culter is generally placed in other ploughs. Should it answer in other soils, as completely as, by Mr Campbell's account, it has done on his own farm, where it has been used 2 years, it must be esteemed a valuable improvement on this essential implement. A particular description of it belongs more properly to the Argyll survey; so far, however, as one may judge from its appearance, it seems to be very deserving of notice.

An improvement in the cast-iron mould-board of the common plough, lately suggested by Sir John Clerk of Pennycuick, is also worthy of attention. In this, it is divided into 3 pieces, the undermost of which being most exposed to friction, will require to be renewed perhaps 2 or 3 times for once of the plough itself, while the uppermost being very little liable to be worn down, may outlast a number of ploughs. In consequence of this arrangement, the whole mould-board admits of being made a great deal lighter, and also must be more economical than the present mould-board as lately constructed by SMALL, which being made much thicker in the under, than in the upper side, is not only thereby increased greatly in weight, but also in price; and besides this, must be continually wearing out of shape. In this last view indeed it may be considered as an effort of his own genius to counteract the effect of his former very ingenious improvement in the curvature of the mould-board as originally made.

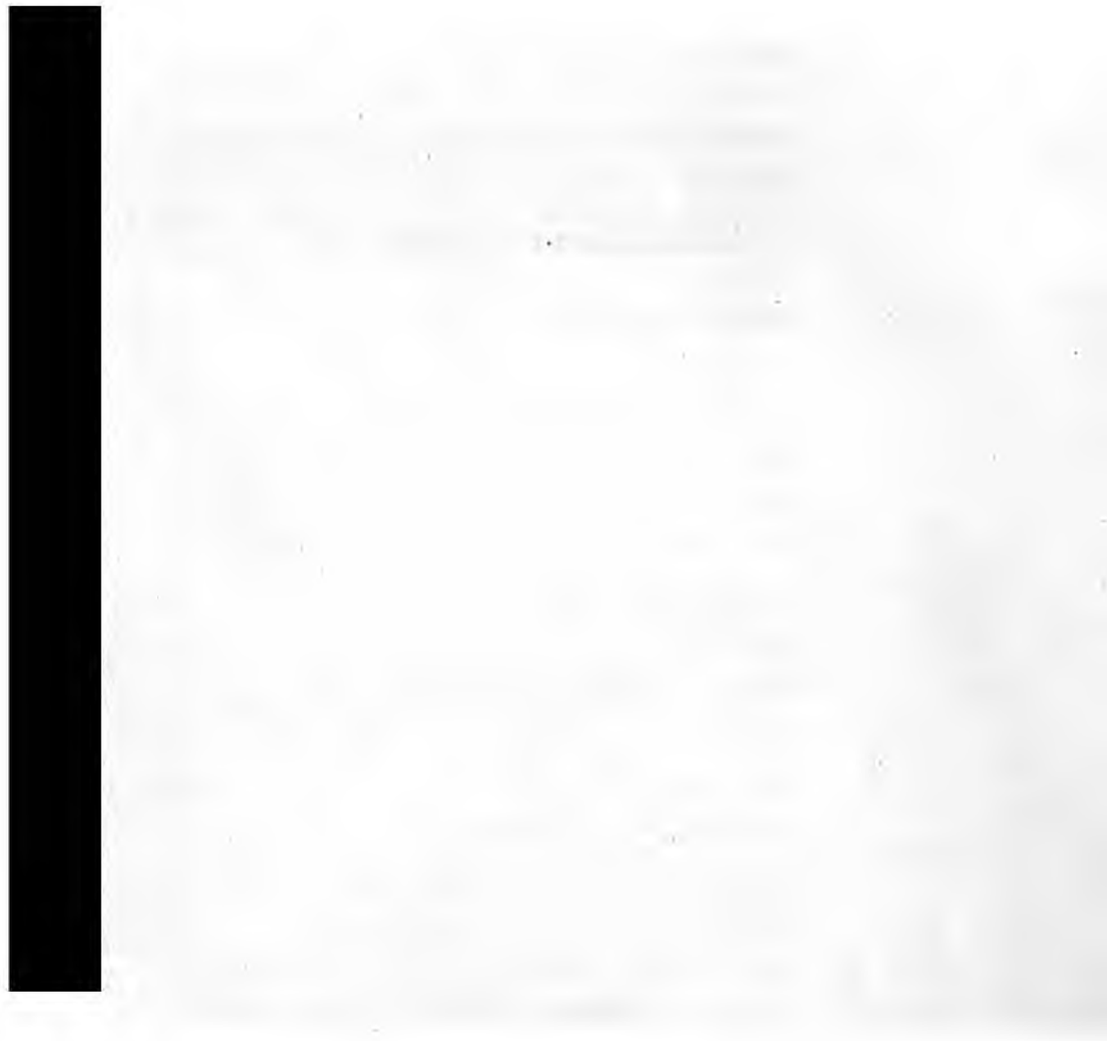
ERRATA.

Page 17, line 2, instead of "and many are not above 1500l." it should be *and not many are above* 1500l.

—— 50, line 9th from the bottom, instead of "purchased from," it should be, *purchased, chiefly from.*

—— 52, line 10, instead of "which has the effect," read, *which, compared with the common barrel churn, has the effect.*

—— 55, line 17, last word, instead of "former," read, *plunge churn.*



6

GENERAL VIEW

OF THE

AGRICULTURE

OF THE COUNTY OF

WEST LOTHIAN

WITH OBSERVATIONS, &c.

GENERAL VIEW

OF THE

AGRICULTURE

OF THE COUNTY OF

WEST LOTHIA

WITH

OBSERVATIONS ON THE MEANS OF ITS IMPROVE

DRAWN UP FOR THE CONSIDERATION OF

Gt. Brit

THE BOARD OF AGRICULTURE AND INTERNAL IMPRO

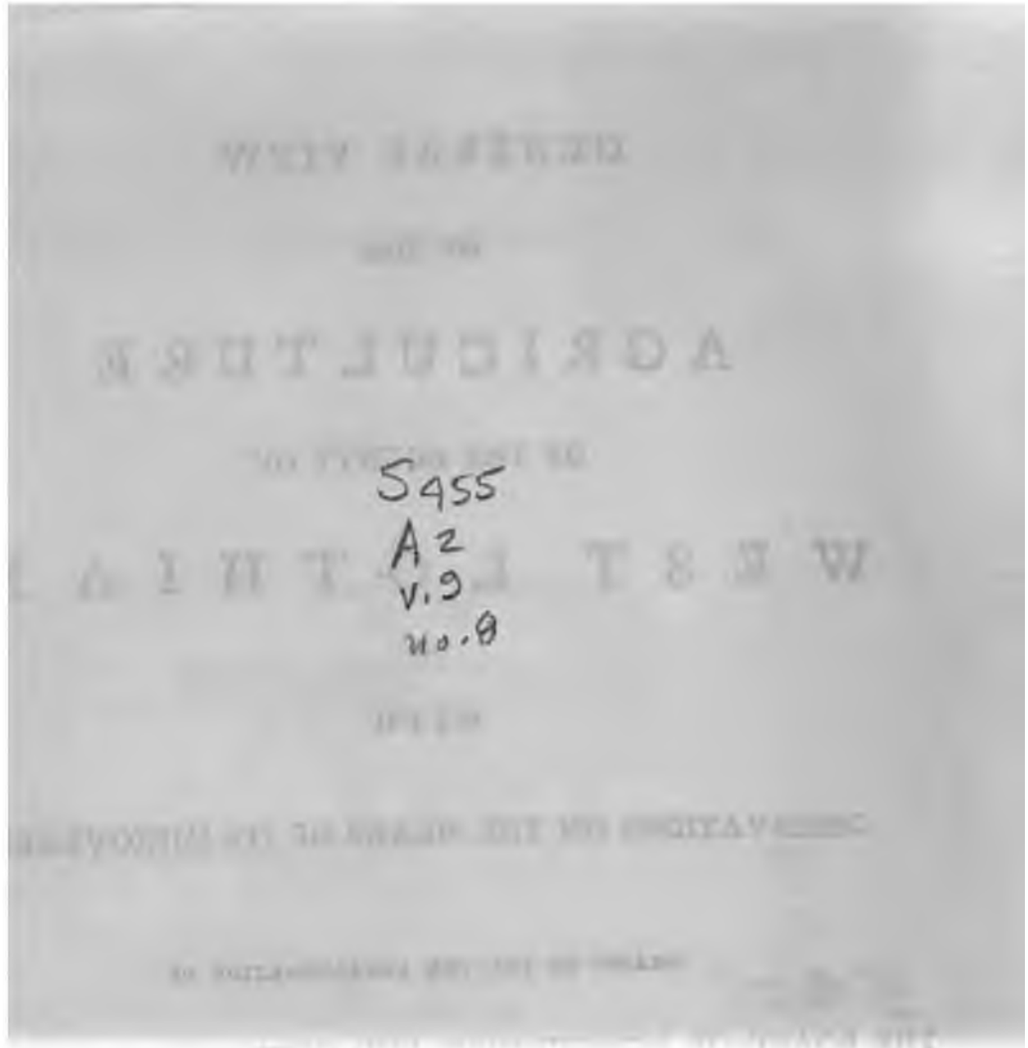
BY JAMES TROTTER,

FARMER AT NEWTON, COUNTY OF WEST LOTHIAN.

EDINBURGH:

PRINTED BY ADAM NEILL AND COMPANY.

M.DCC.XCIV.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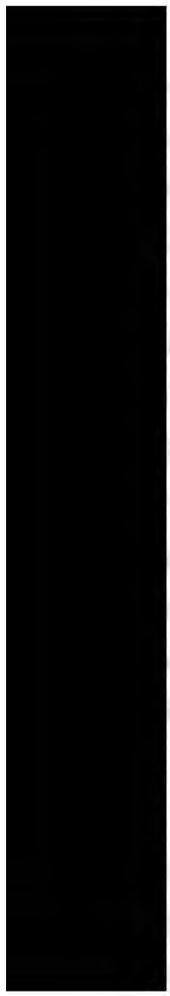
ADVERTISEMENT.

THE following valuable communication, reſpecting
ſent ſtate of huſbandry in the county of Weſt Lothian,
means of its improvement, drawn up for the conſideratio
Board of Agriculture, is now printed, merely for the pu
its being circulated there, in order that every perſon, in
in the welfare of that county, may have it in his power
mine it fully before it is publiſhed. It is therefore re
that any remark, or additional obſervation, which may
the reader, on the peruſal of the following ſheets, may b
mitted to the Board of Agriculture, at its office in Lon
whom the ſame ſhall be properly attended to; and, w
returns are completed, an account will be drawn up of
of agriculture in Weſt Lothian, from the information
cumulated, which, it is believed, will be found greatly
to any thing of the kind ever yet made public.

The Board will probably follow the ſame plan, in rega
the other counties in the united kingdom; and, it is ha
ceſſary to add, will be happy to give every aſſiſtance in it
to any perſon who may be deſirous of improving his
cattle, ſheep, &c. or of trying any uſeful experiment in



INTRODUCTION.

For Remarks a
tional Obſerv

THE COUNTY OF LINLITHGOW, or WEST LOTHIAN, forms a kind of irregular triangle, extending from E. to W. along the Frith of Forth about 14 miles, its northern boundary. It is ſeparated from the county of Edinburgh, on the E. and S. by the waters of Almond and Breich, on which ſide it ſtretches 19 miles. It is divided from Stirlingſhire on the N. W. by the water of Avon, and touches a part of Lanark on the W. and S. W. which ſide is about 13 miles. Its mean breadth from N. to S. may be about 7 miles; and its mean length about 16. The extent altogether may amount to about 112 ſquare miles; that is, about 57,008 Scotch acres, the cuſtomary meaſure in this county*. Of this, nearly a fifth part has never been cultivated, a great portion of which perhaps never will, being, ſome diſtricts of it, wet thin ſoil, and others high rocky grounds, inacceſſible to the plough; the other four fifths, are all, either in tillage, paſture, or woods.

Hills.—There are ſcarcely any lands ſo high in this county as to claim the name of a hill, being rather more properly denominated riſing grounds, or high land: There are, however, ſeveral of theſe interſperſed throughout the ſhire, which ſerve to beautify it, without much diminiſhing its value, as many of them are planted with thriving woods, and all of them afford good ordinary paſture for cattle and ſheep. The names of them are, Mons hill, Craigie hill, Dundas hill, in Dalmeny pariſh; Craigton hill, Binns hill, in Abercorn pariſh; and Binny craig, or hill, in Linlithgow pariſh; with

* Four Scotch acres are nearly 5 Engliſh.

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the high ridge of lands riſing in a range immediately eaſt of the town of Bathgate; the loftieſt of which may not much exceed 1000 feet above the level of the ſea. From theſe heights, in a clear day, the moſt of the ſhire can be ſeen, and they afford one of the moſt varied and delightful views that the imagination can figure. The fine expanſe of water in the Frith of Forth, with the richly planted and encloſed lands ſurrounding the ſeats of the gentry, the ſeats themſelves, ſo variouſly diſpoſed along the banks of the Forth, and acroſs the whole county, the view you have of 14 miles in length from E. to W. by about 4 miles in breadth, moſtly all encloſed with various kinds of fences, and the waſte lands nearly all planted, it muſt be acknowledged by all, give a pleaſantneſs, as well as add a richneſs and grandeur to the proſpect, hardly any where elſe to be met with, and ſcarce to be equalled.

Rivers.—In this county there are no rivers, or waters, as they are commonly called, but thoſe already named, by which the county is bounded. Several ſmall rivulets, or burns, as they are termed, run in every direction acroſs the county, all of which ſerve the purpoſes of turning the various mill-machinery in uſe in this ſhire. No fiſh to any amount are caught, excepting a few freſh water trout. There is a loch on the north ſide of the town of Linlithgow, above a mile in length, and about ¼ in breadth, where pike, perch, and eel, are found in conſiderable quantities; and another ſmall one to the ſouth of this town, called Loch Coat, ſtocked with the ſame kinds of fiſh.

Soil.—The ſoil here is extremely diverſified, abounding with all the different kinds. In the county are ſome of the beſt loams, and richeſt carſe clay; it partakes alſo of a large portion of gravel and ſandy ſoil; but the moſt prevalent is clay, from the beſt to the worſt kinds. Without having

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made an actual ſurvey, it may be ſtated nearly as under, with the rent affixed:

	The Acre.					
14000 acres good clay, at	L. 1	10	0			
7000 loam, - -	1	10	0			
7000 light gravel and ſand,	1	10	0	L. 42000	0	0
18000 clay, cold wet hard bottom, - -	0	10	0	9000	0	0
10000 of high rocky land,	0	7	6	3750	0	0
1008 moſs, &c. - -	0	0	6	25	4	0
57008 acres, at 19 s. 2¼ d. average				L. 54775	4	0

I have given the above rather as the averages, than the prices at which the lands are variouſly occupied. I find the three firſt claſſes of ſoil, rented at all different prices, from 10 s. to L. 3 the acre, the fourth claſs I find rented at from 5 s. to one guinea the acre; the reſt are more uniform.

Climate.—This county, lying nearly in 56° N. lat. may naturally be ſuppoſed cold; but being rather inclined to a level ſurface, and favoured with the ſea breeze along the north ſide, and the frequent blowing of the S. W. winds, which are commonly ſoft and warm, the climate is very temperate, neither very cold, nor very ſultry and hot. Two thirds of this ſhire I reckon to enjoy, if not the firſt, nearly the ſecond climate in this part of the Iſland; being placed at a conſiderable diſtance from the hills on all ſides. Excepting in general rains, we have only drizzlings, compared with what falls on the neighbouring counties to the W. and S. The S. W. end of the county does not enjoy ſo good a climate; as, from the S. W. rains, the cold clay bottom, and ſpungy ſoft ſurface, or ſoil, it is kept almoſt three-4ths of the year damp; which appears to me to be the principal reaſon why improvements are not arrived at the ſame pitch as on the north and eaſt parts of the county. Yet the ſpirit for

enclosing and planting does not seem to be wanting there, which, it is to be hoped, will be continued upon a larger scale; by which that part of the shire would be rendered more warm, and, if possible, more dry; the only methods to be taken there, prior to a further stage of improvement.

We suffer here more from the variableness of the weather, than from its severity. Snow seldom falls very deep at a time, or continues long; nor have I ever found the frost, for these 19 years past, in the severest season, exceed 13 inches deep. The weather most unfavourable to husbandry is the alternate wet and dry, frost and thaw, prevalent in the months of February, March, and April, which injure the wheat crops much, particularly upon light damp thin soils; also, the cold chilling east winds that often blow in May, and all the month of June, which much impede vegetation, and render the grass very scanty for feeding cattle.

A farther specimen of the climate may be taken from the time of sowing, and other operations in farming. Spring seeds, as beans, pease, and oats, are commonly sown from the last week of February to the middle or end of April; barley, from the last week of April to the 20th May; it seldom succeeds well, as to good quality of grain, if much later sown. The hay harvest commences about the 2d week of July; and the corns generally begin to be cut the last week of August, and end with October: In the upland parts of the county, some seasons, it is Martinmas before all is got in. Wheat is sown from the 1st of September to the middle of October with success; but if later, unless the soil be rich and dry, and the weather good, with less certainty of prospering well.

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The following TABLE will partly ſhow the State of the Weather for the laſt 15 Years, commencing at Martinmas 1778, and ending at Martinmas 1793. It will rather be favourable, being taken from Obſervations at Duddingſton, in Abercorn Pariſh:

	No. 1. Froſty Days.	2 Rainy Snowy Days.	3 Depth Snow, Inches.	4 Wind Weſt.	5 Wind Eaſt	6 Wind South	7 Wind North.
1779	30	77	2	256	108	6	5
1780	85	111	12	226	122	5	12
1781	38	64	16	204	154	4	6
1782	52	97	17	197	149	6	13
1783	56	89	8	230	129	1	4
1784	63	84	25	217	139	1	8
1785	79	92	24	218	125	3	19
1786	60	87	13	212	145	1	7
1787	29	90	4	220	138	3	4
1788	56	57	9	223	122	5	5
1789	61	97	31	205	126	9	25
1790	32	88	0	249	109	4	3
1791	42	89	3	244	112	1	8
1792	48	100	15	244	112	3	6
1793	38	101	12	257	95	5	8

At each year, looking from left to right, you have in No. 1. the froſty days; 2d, the rainy and ſnowy days; 3d. the depth of ſnow in inches; 4th, the weſterly winds; 5th, the eaſterly winds; 6th, when due ſouth; and 7th, when due north. I find the higheſt degree of heat we had in theſe years, was in June 1785, from the 21ſt to the 30th. On ſome days the thermometer ſtood at 87°, below the ſhade of a tree, N. expoſure; and at 99° upon the ſouth ſide. The obſervation was made at Newhalls, upon the ſea ſhore; and this heat was ſucceeded by rain and cool weather. So different are the ſeaſons, that about the 6th of June 1787 we had ice one-16th of an inch thick, and about a week of cold froſty weather.

In the above Table, hazy weather and ſlight ſhowers are not taken into the account of rainy days.

Population

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Population and Towns.—This county, which is divided into 13 pariſhes, may contain about 16,550 inhabitants. Its principal towns are, Linlithgow, Bathgate, Whitburn, Borrowſtounneſs, and Queensferry. Linlithgow is the capital of the county, and has a weekly market upon Friday, to which a conſiderable quantity of peaſe and beans is brought, and ſold to different purchaſers in this and the neighbouring counties, for food to the inhabitants and horſes. An attempt has been lately made to have all kinds of grain brought in here, and ſold in the ſame way as peaſe; and the Town-council have not been wanting to fit up proper granaries, to hold grain from week to week in caſe of its not being always ſold; but from the eaſy acceſs that the ſellers and buyers have to each other, in exhibiting the grain in ſamples, the above ſcheme will ſcarcely ſucceed. Beſides, there are 7 different diſtilleries for making whiſky, with ſeveral brewers of ale, in different parts of the county, who conſume much more barley than the ſhire produces; and the farmers very frequently ſell it to them in ſamples at their works, or on the market day. This town has 6 fairs in the year*. Horſes are the principal commodity at theſe; although there are frequently a few milch cows, and cattle for fattening on graſs; but the number is ſmall with reſpect to this laſt article, as few attend for any other purpoſe than ſelling and buying horſes, of which ſome years ago there was a very good ſhow; but it has been remarked, that this has rather declined of late, owing to ſome of the great dealers buying up and ſelling

* The 1ſt, upon the 1ſt Friday after the 2d Tueſday in January. The 2d, upon 25th February, if not Saturday, Sunday, or Monday; in theſe caſes upon the Tueſday following. The 3d, upon the 3d Friday of April. The 4th, upon the 2d Thurſday in June. The 5th, upon the 2d of Auguſt, if not Saturday, Sunday, or Monday; in that caſe upon the Tueſday following. The 6th, upon the 1ſt Friday of November.

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moſtly at their own houſes. The beſt ſhow is generally in the February and Auguſt fairs.

Bathgate has 7 fairs * in the year, in moſt of which, cattle is the prevailing article, there being but a comparatively ſmall number of horſes, Of late years the fairs in May and June have exhibited a good many cows, queys, and oxen; but the breeding of large oxen in this county and neighbourhood having fallen much out of practice, the fairs, of courſe, afford a poorer diſplay in that article.

ESTATES and FARMS.

This county is poſſeſſed by between 30 and 40 land-holders, whoſe eſtates or yearly incomes may be from L. 200 to L. 6000 a-year; beſides a few of inferior rentals, and others who poſſeſs a ſmall number of acres, in the immediate neighbourhood of the two borough towns of Linlithgow and Queensferry. Of the greater eſtates there may be ten above L. 1000 a-year.

Several of the proprietors are, or have been, employed in the Navy, the Army, or the Law departments; numbers of them reſide upon their eſtates, and keep a ſmall farm in their own hands, with a ſufficient quantity of old paſture graſs for feeding cattle and ſheep for their own uſe, and alſo for the butcher. The farms occupied by the gentry are generally in a high ſtate of cultivation, although at more expenſe, for the moſt part, than if occupied by farmers; owing chiefly to the great variety of buſineſs often carrying on in the different parts of their grounds; to their expenſes being

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* The 1ſt, is upon the 2d Wedneſday of April. The 2d, upon the 1ſt Wedneſday in May after Whitſunday old ſtyle. The 3d, upon the 4th Wedneſday of June. The 4th, upon the 3d Wedneſday of July. The 5th, upon the 3d Wedneſday of Auguſt. The 6th, upon the 4th Wedneſday of October. The 7th, upon the 1ſt Wedneſday after Martinmas.

ing conſiderably greater in harneſs and implements; and perhaps moſt of all, to the ſluggiſh careleſſneſs and inattention of ſervants, to whom gentlemen themſelves often have not time or inclination to attend, in order to remedy ſuch abuſes.

Size of Farms.—The farms here, with regard to extent, are from 50 to 300 acres; moſt of them from 70 to 200; always excluding thoſe tenants who poſſeſs a number of ſeparate farms.

In this county there appears, upon the whole, to be nearly *one third* part in wood, in old paſture, and in artificial graſſes; few farms have leſs than *one fourth* in paſture and clover graſs; many have *one third*, and around almoſt every gentleman's ſeat there are not leſs than 20 acres: Many have from 100 to 200, and ſome from 1000 to nearly 2000 in woods and old graſs. The reaſon, that paſture-graſs prevails ſo much here, ſeems to be the vicinity to Edinburgh. Numbers of perſons are bred to buying and ſelling cattle and ſheep, in this and the adjacent counties, who always afford a higher rent for encloſed lands, than corn-farmers are able to give for a 19 or 21 years leaſe. The graziers, for the moſt part, have only from 1 to 7 years leaſes; and the land-holders find an intereſt in letting their lands thus in graſs, as theſe are thereby more enriched; and they have always their rents paid for that immediate crop at the end of the ſeaſon. Farther, they have it in their power to get from L. 2 to L. 3 Sterling the acre for two or three crops, when broken up, if the lands be of rich quality; although this mode of breaking up will not ſucceed if often repeated, as the lands will in that caſe require a ſummer fallowing, with a proper quantity of manure, to recruit them again.

Leaſes.—Theſe are commonly for the ſpace of 19 or 21 years in corn farms; although in ſome inſtances 24, 38, and even 57 years. The graſs-tenants are all on ſhort leaſes, as

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already obſerved. The entry is commonly at Martinmas to farms for tillage; the terms of payment by ſome are at Martinmas and Whitſunday, for the crop immediately preceding; by others quarterly, in equal portions. Graſs-rents, as mentioned above, are paid before the end of the year, for that very year's crop. Rents are moſtly paid in money, by all who have lately got leaſes; although a conſiderable number of farms ſtill pay partly in grain, in money, in fowls, and carriages of coals.

The covenants in the leaſes run in the following terms: The houſes are all delivered over by the proprietor to the tenant in a habitable tenantable condition, in which ſtate the farmer is bound to keep them, and leave them at his removal. In moſt eſtates the landlord furniſhes great timber for the houſes. The proprietor always reſerves all the minerals, with a right to work them, upon paying the tenant damages. In encloſed lands, the tenants are bound to uphold the fences in moſt caſes; in ſome farms, the landlord upholds them; in others, each bears an equal burden, which is the beſt way to keep them good, and prevent litigation. For, in the firſt inſtance, there are few outgoing tenants but are peſtered with the incoming one; and the proprietor is often dragged into a proceſs in conſequence, which creates much expenſe at law. Many of the old leaſes were crammed with uſeleſs rules and rotations, neither tending to the good of the landlord nor tenant. The preſent ones, in general, bind the tenant to leave a proper proportion of land in graſs at the end of his leaſe, and the remainder of the farm to be left in ſuch a ſtate as accords to the rules of good huſbandry.

ENCLOSURES.

In this county there may be about 47,000 acres encloſed, and that moſtly by the proprietors. Some of the late encloſures have been executed by the tenants, the landlord advancing the money, and the farmer paying from L. 6 to L. 7 *per cent.* from the time the money was laid out. We have here almoſt all the different kinds of fences that are in uſe. Some ſtone walls are coped with ſtone, and others with turf: Some are built of whin, others of free ſtone. If built with lime, and the materials within half a mile, they are commonly executed for L. 3 the rood, every expenſe included. This kind is generally built about 5 feet high: the rood is 36 yards in length, and 1 yard in height. The price of materials for building ſtone fences differs very much, according as the rock is more or leſs eaſily raiſed; and if the carriage be at a conſiderable diſtance, that adds greatly to the expenſe. I have known the ſtones quarried from 1 d. to 6 d. the cart load. It will take at leaſt 36 load to the rood, and I have paid from 8 s. to 11 s. for the building ſuch dry fences the rood.

The *ſunk Fence*, faced up with ſtones on one ſide, and a row of thorns planted on the top, is another kind much followed in ſome parts of the county. It will coſt at leaſt 1 d. the yard to caſt the foundation and raiſe the bank, preparatory to the maſons building the ſtones, which will coſt from 4 s. to 5 s. the rood. This fence is generally raiſed 4½ feet high in ſtone, with a good cope of ſod. I have ſeen, and indeed have practiſed the laying the thorns horizontally,

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about 3 feet high from the foundation of the fence, with their tops about an inch out from the face of the wall; care being taken, in the courſe of covering them, not to injure the plant, and that abundance of earth be placed upon their roots. In this way they require no cleaning; and if plants can be procured ſtrong and long enough, they thrive better than when planted in the top of the bank, are reared at far leſs expenſe, and become in the end an exceeding ſtrong good fence. I commonly have planted them about 6 inches aſunder.

The *double dry-ſtone Fence*, commonly called the Galloway dike, is uſed in ſome parts of the county. It is generally built, about 3 feet high, and then covered to the height deſired, with the ſtones in the unpoliſhed manner in which they are commonly raiſed from the quarry; its rugged appearance renders it a good fence, for cattle of all kinds.

Ditch and Hedge, is the moſt prevalent fence here, from 4, 5, to 6 feet wide at top, 1 at bottom, and from 3 to 4 feet in depth. The 6 feet by 4 deep, is made for 1 s. ſome 1 s. 2 d. the rood of 6 yards; the 5 feet by 3, from 8 d to 10 d.; the 4 feet by 3, from 6 d. to 7 d. the rood. Some of the fences of this kind are double, by having a ditch on each ſide, and the bank in the middle, with a hedge on each ſide of courſe; in ſome caſes, a row of trees is put on the top of the bank, which ſeldom or never comes to any good as trees, and always hurts the hedges. This laſt way of encloſing, although it appear at firſt to be an immediate fence, ſeldom or never, except the lands be dry, and a rich loam, makes good hedges, the one in a great meaſure hurting the other, and their roots being cut off from both ſides by the ditches, they ſoon ſtint, and in damp wet lands die out; but in lands that are wet, and the declivity not great, it often is abſolutely neceſſary to have recourſe to

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fences of this kind, and alſo in march fences between proprietors they are often choſen, when ſtone fences are not to be had, or are found not proper for the ſoil. The price of thorns, is about 1 s. the 120, when purchaſed, but many of the proprietors raiſe them in their own nurſeries, which is the beſt way, as by that means they can have them of all ages and ſizes fitted for the different ſoils. I have always found the healthy plant, about the ſize of the little finger, to come ſooneſt to a hedge.

The beſt method of *pruning* hedges is now pretty well underſtood, although it is not attended to as it deſerves: It is by ſloping them from bottom to top, ſomewhat in form like the common roof of a houſe. Others chooſe rather to round them a little, approaching near the form of a half circle. Both make good fences, and give the plants the beſt poſſible chance of thriving.

The ſize of encloſures is ſo different here, that it is difficult to ſay which prevails moſt; till of late, ſtraight lines have been too ſtudiouſly adhered to, in the forming of encloſures. However deſirable this may be in point of uniformity, and from being often more conveniently ploughed, the draining of the land ought always to be a firſt principle.

DRAINS.

The draining of land here is executed with ſkill. The common or moſt general practice where ſtones can be had, is a ditch of about 2 feet wide at top, 10 inches at bottom, 3 feet in depth, half filled with ſtones, covered with a quantity of ſtraw to prevent the earth from going down among the ſtones, and the earth put back upon a level to the ſurface. Some take furze where ſtraw is ſcarce; others where ſtones cannot be had, take bruſhwoods of any kind and fill the ditches with, which will laſt a conſiderable time. Al-

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though the methods of draining are in general well underſtood, the practice is not yet ſo univerſal as it deſerves; nor that particular attention paid to carrying the drain fully as high up the ſloping grounds, as where the water or ſpring makes any appearance. If the lands decline faſt, it will often require a number of drains to effectuate the cure. The price for caſting drains on ſoft ſoil is 2½ d.; on hard ſoil 3 d. the rood, of 6 yards.

TILLAGE.

The arable lands are in general laid out in fields, from 4 to 20 acres each, the ridges laid out in the way beſt ſuited to carry off the water. Ridges of 18 feet in breadth are the moſt prevalent in the corn-farms here, particularly when the land is of a clayey texture; they admit of being twice gathered, in order to raiſe them properly, for carrying off the water ſpeedily; they are convenient for ſowing with 2 caſts, and are often after ploughed 2 together, called *caſting*, alternately every year. In ſome damp lands for graſs, 9 feet ridges are uſed, and when taken up for grain, two are laid together. In very dry ſoils, 10 feet ridges are uſed, and are kept flat, changing the furrow to the crown alternately every ploughing. In the upland and wet parts of the county, they are under the neceſſity of keeping by the old high broad ridges; in moſt of their ſoils, the levelling and altering of their ridges would be productive of no good, but rather the reverſe, as the bottom is too wet, and the ſoil too thin to bear being properly levelled. Proper attention muſt always be paid to the different ſoils, as what ſuits a dry loam, will not apply to a ſtrong clay.

IMPLE-

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IMPLEMENTS of HUSBANDRY.

The *Plough*, now moſt in uſe in the low part of the ſhire is the chain plough drawn by two horſes, with the caſt iron mould-board, as lately improved by Mr James Small, at Ford, which will ſoon become univerſal. In the upland parts of the county, the old Scotch plough is ſtill much uſed, and in many farms in the low lands is ſtill kept, and employed occaſionally for breaking up very coarſe ſtiff ſoils, where great ſtrength is applied and is requiſite; in which caſe, it is ſtill an uſeful inſtrument, and ſhould not of courſe be totally laid aſide.

The *Harrows* here are the ſame as thoſe uſed in almoſt every part of the kingdom, having received little improvement, unleſs being made in general ſtronger and heavier, both in wood and iron; the brake-harrow, of which there are various conſtructions, is very frequently and properly applied, for reducing coarſe and foul lands.

Rollers are very generally employed here: They are made of freeſtone, 4, 5, and ſome 6½ feet long; the firſt 2 kinds from 15 to 16 inches, the laſt 18 to 20 inches diameter. They are the beſt inſtruments for ſmoothing the ſurface of graſs lands, and do much good to crops of wheat upon light ſoils. If froſts and rain do not happen to follow the operation, they are the moſt powerful and expeditious means of breaking clods upon lands ever yet found out. I have often had occaſion to uſe the large one laſt mentioned, and always found it produce the wiſhed for effect; it takes 3 good horſes to draw it, and will go over 4 acres a-day, and even 5 or 6, if the horſes have to turn but ſel-

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dom. When ſuch a powerful one has not been at hand, I have frequently twice rolled with a ſmaller, harrowing between the rollings, which anſwers almoſt as well, although at more expenſe of labour.

Carts here are the ſame as in the neighbouring counties to the eaſt; ſome drawn by two, and others by one horſe; the iron axle is pretty much uſed, and ſingle horſe carts, both for farming purpoſes, and upon the great roads, are coming more frequently into practice.

Drilling Inſtruments are but few and very ſimple here. I have ſeen them in Roxburghſhire of a more comprehenſive ſtructure, of which no doubt a proper deſcription will be given by the gentleman employed by the Board, whoſe abilities are fully equal to the taſk aſſigned him.

Thraſhing Mills, lately invented, are coming to be frequently uſed by thoſe who poſſeſs large farms here, and where more flail men are employed, than one in a ſeaſon. They certainly are great improvements, eſpecially if turned by water, in which caſe I think they may even be employed in ſmall farms with advantage. *Fanners* for cleaning grain are here univerſally uſed, and well underſtood.

I find it very difficult to affix a certain price to the different implements, as in ſeveral parts of the county they differ very materially, owing to the different prices of wood, and the different quantities of iron applied, ſome requiring them ſtrong and heavy, others more ſlender and light.

MANURES.

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MANURES.

Dung is a manure univerſally uſed, and moſt generally approved of. There are but ſmall quantities procured from the towns, which are of no great extent, and that, commonly at the price of from 2 s. to 3 s. the cart-load drawn by two horſes. Moſt of the dung made, is from the farm cattle, and others bought in for the purpoſe of conſuming the ſtraw into dung, and fattening off upon graſs in ſummer. *Lime* abounds in various places of the ſhire, and is much uſed as a manure in every part of it. It is found to be of great benefit, eſpecially if applied along with a little dung, upon lands newly ſummer-fallowed, or upon old graſs-lands that have acquired a quantity of moſs, or what is vulgarly called fog: Theſe appear to me to be the moſt advantageous caſes of applying it. The quantity of lime laid upon an acre is from 60 to 80 bolls, the price 10 d. the boll, the Linlithgow peaſe firlot, 4 to the boll. This is the price upon the eſtate of Dudingſton, which furniſhes lime of the richeſt quality in the ſhire. The other lime works in the middle of the ſhire, ſell at 2 s. the boll, the Linlithgow barley meaſure. It is to be regretted, that the price of ſo uſeful a manure is become ſo expenſive to the farmer, as it muſt coſt from at leaſt L. 4 to L. 5 Sterling the acre, if carried to any conſiderable diſtance; add to which, 25 cart-loads of dung, (at 2 s. 6 d.) which is the leaſt quantity commonly uſed, with the carriage and ploughing, *&c.* the expenſe of an acre thus fallowed and manured, will not be leſs than L. 10 beſides the rent of the land, and I am afraid the manure will ſtill riſe in price, owing to the riſe on coals

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and workmen's wages. There is ſhell-marl upon the eſtate of Dundas, in the eaſt end of the ſhire, but it has never been applied to any extent, ſo as to aſcertain properly, whether it would turn out to a great advantage or not; and perhaps where it has been tried, the lands are of too wet a caſt for its operating with deſired effect.

Compoſt Dunghills, conſiſting of rich earth and lime mixed, are frequent in different parts of the county, are a good top dreſſing to paſture graſs, and are often for that purpoſe applied in the upland part of the ſhire.

The Farm-yard Dung, is commonly led out in the winter ſeaſon before ſeed time, laid up in dunghills upon the lands where it is to be applied, and allowed to ferment and rot properly; which is a good practice. The dung of all kinds of domeſticated fowls, is found an excellent manure, and alſo ſoot; both are uſed as top dreſſings to winter crops or graſs, either for hay or paſture; but being produced in ſuch ſmall quantities here, turn out but to a ſmall account.

CULTURE OF THE *DIFFERENT CROPS.*

Graſſes.—Red clover and rye graſs, are ſown in all parts of the county, where hay is intended; the uſual quantity the acre, is from 8 to 12 lb. and from 1 to 2 firlots of rye-graſs, the Linlithgow wheat meaſure; if for paſture, an addition of 4 lb. white, 4 of yellow clover, and 3 or 4 lb. of rib-graſs or narrow leaved plantain, is ſown in many places.

There is a tall early kind of graſs lately imported from Sweden, by Mr Seaton of Preſton in this county, of which I got a handful, and am endeavouring to raiſe a ſufficient quantity, in

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this is not to be recommended, as the ſeaſon ſeldom affords weather proper for dreſſing it well. Various kinds of wheat are propagated here from England. The old red is the moſt hardy and ſtands the winter beſt, and when mixed with 2-3ds white, I have always had in this way the largeſt produce. Some of the kinds from Kent thrive well, but that ſpecies which affords the ſhort ſtraw ſhould be avoided, unleſs on the early rich loams. The yellow thrives well here, but is about a week later than moſt other kinds. The farmer ſhould always chooſe, if poſſible, his ſeed from a view of its growing in the field, as well as from the plump appearance of grain in the hand, and ſtudy to have the kind that has a long head cloſe in the grain and of a ſquare form.

Beans and Peaſe are moſtly ſown on lands after the wheat crop; if ſtrong clay ſoil, always in broad caſt, if lighter ſoils, frequently in drills. Some mix the two grains, according to the proportions they chooſe; others, if the land be a little inclined to clay or a rich loam, ſow beans alone. If for broad-caſt, one ploughing is only requiſite as early in February or March as the ſeaſon will permit, and ſown immediately; if for drill a crop, it is frequently ploughed in autumn, and again in the ſpring as ſoon as dry, and ſown accordingly. In order to ſecure a good bean crop, it is neceſſary to have them ſown as early as poſſible. What I have found to anſwer beſt here in the drill huſbandry, is to give them ſufficient ſpace between the rows, and a little more ſeed in the drill, as in this way they puſh faſter on while young, than when ſown thin, and a narrow ſpace between rows; the ſpace may be from 2 to 3 feet between drills, which will afford room for the air and ſun to ripen them well. The beans propagated all over the Lothians and Fife, ſeem to me nearly the ſame, and are good kinds. In the 1783, we had ſome imported from England, which turned ill out here, producing a great quantity of ſtraw,

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but never ripened properly; the produce very poor. The common peaſe ſown here, admit of little variety; there is an early kind that is ſometimes uſed, but ſeldom ſucceeds ſo as to encourage its culture.

Barley is commonly ſown after a peaſe or bean crop; ſometimes after turnips, and alſo after oats. If after beans, the land gets one ploughing in the autumn and two in the ſpring ſeaſon prior to ſowing; the ſame method is followed after oats; after turnip, ſometimes two and often only one ploughing in the ſpring ſeaſon previous to ſowing. Clovers and other graſs ſeeds are frequently ſown here along with the grain, either for paſture or for hay; next to which a crop of oats almoſt conſtantly ſucceeds, when the land is broken up again. The barley that has been long propagated in the county, and frequently changed from the carſe of Falkirk, is the beſt ſuited to this ſhire.

Oats are by far the moſt generally cultivated over the whole county, owing to their ſuiting every ſoil almoſt in every ſituation, better than any of the other grains; raiſed at leſs expenſe, and having conſtantly a ready market for them, as they are made into meal, univerſally uſed for food to the people, and a vaſt quantity for horſes. They ſeldom need or have more than one ploughing prior to ſowing, the time of which varies much according to the nature of the ſoil and crops that precede; if out of ley, from the middle of December, &c. if after wheat or barley, on the end of ſaid month; often later, much as the ſeaſon is dry or wet. The kinds of ſeed moſtly cultivated are 1*ſt*, the early ſpecies originally from Fauns or Blainſlie in Lauderdale, 2*d*, The late kind from Halkerton in Angus, 3*d*, A kind they uſe in the upland parts of the county, about 10 days more early than the firſt mentioned. I have ſown the laſt upon my farm for three ſucceſſive crops, for the ſake of experiment, but never had more than 9 bolls

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the acre, and the grain coarſer than the other two kinds, but always as early as mentioned above. Since the 1782, I have tried, beſides the above, ſix different kinds from the Continent, but find that none of them ſucceed, if recently ſown, like the original kinds firſt named. The red oats bid as fair to be of advantage to the farmer as any of the new kinds, but I have not yet had a ſufficient number of crops to ſpeak of them with certainty.

Turnips are raiſed in different parts of the county, where the land is dry, and the culture well underſtood. They are for the moſt part conſumed by cattle in ſtalls, and fattened for the butcher. The time of ſowing them is from the middle of June to the end of July. The land for turnip often requires many ploughings, with the frequent application of the brake and the harrow, to clean and pulverize the ſoil well. After a proper quantity of dung is applied, they are all ſown in the drill way here.

Potatoes are raiſed in conſiderable quantities all over the county; and what ſurpriſed me not a little, I found that the upland parts of the ſhire produce generally a larger increaſe than the more cultivated and low ſituations. At Livingſton the laſt year, 1793, the produce of part of a field of ſeveral acres, was from 100 to 130 bolls the acre, Linlithgowſhire barley meaſure, and as many as would lie on the firlot with a ſhovel. Towards Whitburn they count upon 60 bolls the acre. It was the purple ſtreaked kind that afforded the largeſt increaſe.

The ſpecies propagated are ſo numerous, and many of them good, that it is difficult to ſay which is beſt. Different ſoils and ſeaſons have a great effect upon the taſte of this root; and even different perſons have different taſtes, ſome extolling a dry kind, others a more watery one. I have obſerved, when long uſed, that the plant turns weak and more inclined to curl, than when new, or a few years from the ſtem,

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ſtem, or from the ſeed. The raiſing them from the ſtem is the moſt eaſy and certain way to come at the ſame ſpecies. The ſtem-potatoes are, ſome ſeaſons, found in great plenty upon the joints of the ſtalk; and after the ſecond year's planting they are in full perfection. The raiſing them from the ſeed is a more tedious proceſs; the kinds numerous and uncertain. Potatoe lands, after being two or three times ploughed in the month of April, are planted by the plough in every ſecond furrow, or in drills, ſome from 20 inches to 3 feet between rows, and about 10 or 12 inches aſunder from each other; always applying a proper quantity of dung to the lands, ſometimes in the autumn, ſometimes at the laſt ploughing when planted.

The *red Yam* is now much out of uſe in this ſhire; it never ripening fully, and many accidents happening to cattle by ſwelling them to death; have made the white yam, or a large prolifick watery potatoe that ripens well, preferred. I cannot omit here mentioning a cure for cattle ſwelled with potatoes, which, if given to the animal before it falls down, will ſcarcely fail curing the diſeaſe in a few minutes, as I have experienced in ſeveral inſtances: Take a full Scotch pint of water, put as much common ſalt into it as can be ſpeedily diſſolved, and pour it into the animal's ſtomach; it will operate, as an emetick, almoſt an inſtant cure.

Flax grows well in many parts of the county, although but raiſed on a moderate ſcale. It was ſome years ago attempted pretty extenſively, but has never ſucceeded; chiefly owing to the want of fit hands to manage and dreſs it properly and faithfully for the manufacturer.

Tares are raiſed on ſeveral farms, to cut green for food to horſes, but on a very ſmall ſcale. They generally ſupply the abſence of red clover, until it become fit to cut a ſecond time.

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ROTATION of CROPS.

1ſt, For Clay Lands.

The rotation generally followed on the beſt clay ſoil, is, 1ſt year, ſummer fallow, with dung; 2d, wheat; 3d, beans and peaſe; 4th, barley; 5th, clover and rye-graſs for hay; 6th, oats; 7th, ſummer fallow, *&c.*

2d, For Light Lands.

If taken up from graſs, 1ſt year, oats; 2d, turnip with dung; 3d, barley; 4th, clover and rye-graſs; 5th, oats; 6th, turnip.

3d, For Light Soil or Loam.

1ſt year, turnips dunged; 2d, oats or barley; 3d, clovers for hay; 4th, paſture; 5th, oats; 6th, turnip.

Many more might be mentioned were it neceſſary, or were it poſſible to follow them. The variable climate; the being near or diſtant from great cities or towns; the having the command of more or leſs dung; the being encloſed or not, all tend to vary the mode of cropping. Every intelligent farmer underſtands well the utility of mixing green crops frequently.

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BUILDINGS.

Farm-ſteadings are generally much improved of late; and the new built ones, of which there has been a conſiderable number, are ſubſtantial and good; laid out moſtly in the form of a ſquare court. Many of the ſeat-houſes are covered with blue ſlate, others with pantyle. The office-houſes are almoſt all covered with tyle or thatch, which laſt is much better underſtood of late than formerly. It is now executed in a very neat ſubſtantial manner; and, were it not for the very great demand for ſtraw to be made into dung, this method would become much more general than pantyle. Proper ſheds, with a granary above them, are much wanted in more than 4-5ths of the farms in this ſhire, which is a conſiderable loſs to the farmers, few of them having any place to lay up grain, either for ſeed or for other purpoſes.

ROADS.

The great roads throughout the county leading to and from Edinburgh, are upheld by the money ariſing from tolls, and are kept in excellent order. The croſs roads are made and kept in repair from the money collected in the different pariſhes, according to the number of ploughgates. Seventy acres of arable land go to the ploughgate, which pays at different rates, as the Commiſſioners, who are the proprietors of lands, or their proxies, think neceſſary; generally from 12 s. to 16 s. the ploughgate. Although they are greatly improved within theſe few years, there ſtill requires much to be done to render them complete.

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LIVE STOCK.

The breed of *black Cattle* has been very little attended to, unleſs by ſome few of the gentry, who for experiment or pleaſure have tried ſome of the Engliſh kinds; except the breeding of cows whoſe ſpecies are eſteemed the beſt for milk and butter, no other regard is had to the form of the animal, although a few years attention to proper bulls would mend the figure, without injuring the quantity or quality of the milk, and raiſe the value when ſold at leaſt a ſeventh part. There are but few oxen reared here, as the labour is now moſtly all carried on by horſes. Numbers of young cows are bred, and ſold for fattening off upongraſs, above what is wanted for the dairy.

Almoſt no *Sheep* are bred here but in gentlemens encloſures, which is done for pleaſure, utility, or experiment, where indeed a variety of different kinds are reared with ſucceſs. Moſt of the farmers and graziers buy them from the neighbouring counties in the ſouth or weſt, and feed them off for the butcher yearly. The ſpecies are, the ſmall black faced, the wool worth only 6 d. or 8 d. the fleece. Surely, if proper attention were paid to croſſing with ſome of the Cheviot or Ryeland kinds, the wool would be worth double; and, if the grounds were not overſtocked, and proper care taken for winter food, this would turn out a real benefit both to the proprietor and tenant, which it is to be hoped will take place, conſidering the great exertions that have been made by the Society eſtabliſhed for that purpoſe.

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A proper attention for many years has been paid to the rearing of *Horſes* here, although more regard has been, and is ſtill paid to the horſe than to the mare. The kinds moſtly reared are for draught, of which the county ſerves itſelf, and ſells a conſiderable number to the neighbouring ſhires yearly, both at the age of one year old and upwards. The county has been particularly indebted to Mr George Henderſon at Craigtoun, for a horſe of his, got by one of Mr Bakewell's ſtallions, well known for his different breeds of cattle, ſheep, and horſes: He is of the middling ſize, and a dark brown colour; but for figure, motion, and due proportion, he is equalled by none in this part of Scotland. I have reared from good mares got by him, young horſes for ſtallions; ſold them riſing one-year old at L. 20; have refuſed L. 50 for a two-year old; and have ſeen L. 63 paid for a three-year old; which ſhows what due attention to proper breeds will do.

A few *Swine* are kept by ſeveral farmers, and particularly diſtillers, but are far from being generally either reared or conſumed here, the bulk of the people not being fond of their fleſh.

WOOD LANDS.

Both the former and preſent proprietors of eſtates have paid great attention to planting. A conſiderable quantity of acres is found under young and old plantations almoſt on every eſtate; and that truly valuable improvement of planting high waſte lands is ſtill going on.

The kinds planted are chiefly, oak, aſh, elm, birch, plane, beech, alder, Scotch fir, larix, ſilver fir, and ſpruce, with the different kinds of ſaugh or willows. In ſhort, ſome of the proprietors have, beſides thoſe mentioned, a collection of

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all the other trees and ſhrubs or evergreens natural to Scotland, in their plantations. The uſe and value of the oak, aſh, elm, and birch, are univerſally known. The plane is uſed for blocks and pumps to ſhips, and alſo at printfields for different purpoſes; for all which, if it be of ſize, it will bring from 1 s. to 2 s. the ſquare foot. Beech ſells at from 1 s. to 2 s. the ſquare foot, if large enough for keels to ſloops; and if for furniture to houſes, at from 10 d. to 1 s. Alder, if allowed to grow up to a tree, is ſometimes pretty large, and affords a highly ſtreaked variegated colour, but is not much uſed. Scotch fir, if intended or allowed to come to maturity, planted in large clumps, belts, or plantations, for which it will at leaſt take from 50 to 60 years, is a moſt uſeful and neceſſary tree; the greateſt part of the roofs of farm ſteadings here are of it, where it can be had. It is likewiſe an excellent cover when ſawn for carts, and bears more fatigue in this way than foreign fir. When ſold it commonly brings from 6 d. to 8 d. the ſquare foot. It always produces timber of the beſt quality when it grows upon rocky or hard ſoils. The larix bids fair to be an uſeful ſpecies of fir; the ſilver fir thrives well, and makes a pretty tree. The ſpruce is ſcarce worth notice, few of them coming to perfection, and when they do come of ſize, are dear to work up, being ſo knotty and coarſe. The willow, or large ſaugh tree, is much uſed for covering water wheels to mills. Many of the proprietors attend to the training up their woods with attention and minuteneſs; others do not; leaving them to overtop and choak one another, as if ſhrubs or bruſhwood had been their original intention.

I have purpoſely avoided troubling the Board with a report of the prices of labour, ſervants wages, implements of huſbandry, quantity of grain ſown, and the product, as alſo hay-making, with ſeveral other articles, ſo ably and accurately given already in the Report of Agriculture by Mr George Robertſon, for the County of Mid Lothian, the two ſhires being nearly ſimilar to each other in theſe particulars.

MISCELLANEOUS OBSERVATIONS,

AND

HINTS for IMPROVEMENT.

Although a general ſpirit for breeding good horſes prevails in this county, it will take ſome years before they arrive at that perfection in point of ſize, figure, and motion, that they ought to be. Many of the tenants ſtill retain prejudices in favour of a mixed traſhy kind of ſtock, imagining that horſes of larger ſize and figure are much worſe to maintain, which is not the caſe in exact proportion to their weight, neither in the brute creation nor human body; although, no doubt, in very large animals a greater quantity of food will be requiſite, if both are equally exerciſed in proportion to their ſtrength, or are required to be made fat. Not that I would recommend the heavieſt kinds for farming purpoſes, as I find the middling ſize the moſt proper; but thoſe for ſale, when proportionably made, cannot be of too great ſize; and for that purpoſe, I would again recommend a particular attention to the mare as well as the horſe. The improvement of the breed of cattle labours under ſtill greater diſadvantages here, as little attention is paid to it farther than tends to increaſe the profits of the dairy.

Farther, I would ſuggeſt to proprietors to grant a renewal of leaſes to tenants poſſeſſing their farms, from two at leaſt to five years before the old ones expire. This would tend much to keep agriculture in an even undiſturbed progreſs: Whereas the method moſt prevalent, that of not granting a leaſe till the laſt crop, and ſometimes not till within a few months of the very erm of removal, tends to make the te-

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nant take every advantage of the farm, for the ſake of preſent pr fit, and of courſe to derange and ſpoil the farm for years to come, to the great hurt of the incoming tenant, and even the public at large, as the ſame quantities of grain cannot be brought from it for a number of crops. Were landlords as attentive to have their farms occupied by tenants of ſufficient ſtock, ability, and attention to their buſineſs, as many of them are to procure high rents, they would ſeldom have occaſion to change the tenant, although that might ſometimes happen. And I believe the majority ſeriouſly wiſh to follow that plan; but, from their various occupations or amuſements, many of their eſtates are left to the management of agents, whoſe chief ſtudy is to muſter up a large rent-roll *.

The proprietors upon the ſouth-weſt end of the county, if they expect their plantations to thrive, would do well to attend to the draining of the ſtagnant water by proper enclo-ſures and open drains; and plant in large belts and clumps, as trees will never do well in ſmall narrow plantations. Neither ſhould the plants be big or old when planted. I would even venture to try the oak, and other trees that grow readily from the ſeed, in ſuch ſituations, planting them at the diſtances wanted, in places not too wet, and yet having ſufficient moiſture to make them vegetate. It is a certain fact, that large pieces of oak have been found in the moſſes in that neighbourhood. Symptoms of birch and hazel have likewiſe been found there, which ſhows that they have once grown naturally upon theſe lands.

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* They of courſe prefer the higheſt bidder, who for the moſt part is a needy or deſperate tenant, who by one or two ſterile crops, or other accidents, is rendered incapable of fulfilling the obligations he came under. The whip of the law is applied to procure the landlord's rent; the farmer is ruined, the lands left alſo in poverty; whilſt the law alone is the better for it. What is much to be regretted, this is not a ſingle caſe, but is too frequently repeated, by which agriculture is in many places kept rather in a retrogade ſtate.

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I have often thought in this ſame part of the county, where breeding of cattle and horſes might be advantageouſly carried on, had the farmers command of plenty of winter food; although they raiſe their crops abundantly rank, yet, owing to the late climate and ſoil, they are very uncertain of bringing the grain to perfection, and often loſe the fodder endeavouring to ſave the corn, conſequently have neither good,—That in all ſuch late uncertain farms, there ſhould in the dry ſeaſon be cut a part of the crop (ſuch as oats, barley, and perhaps peaſe and vetches) green, and made hay of for winter meat. The reaſon for this being neceſſary, is, that clovers thrive poorly, and even rye-graſs affords an uncertain ſcanty crop in many farms.

The obſervations which the Board are already in poſſeſſion of, with regard to the employing of oxen, are very well founded; but where diſpatch is required upon hard roads, and that often in warm as well as wet weather, oxen can never be applied with ſafety and advantage.

To complete the encloſing of the county, (which is already ſo far advanced) ſhould never be loſt ſight of till finiſhed; conſidering the rent it affords in graſs, and alſo the particular advantages thereby afforded to enrich and reſtore the ſoil, where dung is ſcarce. After which, it ought to be the particular ſtudy of the farmer to keep his lands dry, clean of weeds, and as rich with manures as poſſible; obſerving to plough the different ſoils in due ſeaſon.

Liquoring of ſeed wheat, to prevent black, or what is called ſmutt, is generally known and practiſed here. The beſt method is to take ſalt water, or if that cannot be had readily, chamber-ley. Add as much ſalt as will make the liquor ſwim a freſh egg; the wheat is put into the liquor, all the light grain being ſwimmed and taken off, and then laid on a floor and dried, by mixing as much powdered lime with it as makes it ſow properly. I have known extenſive farms in which this practice is quite given up, the farmers purchaſing yearly a quantity of Engliſh ſeed from a mer-

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chant they can confide in, the produce of which they ſow only a ſecond time; by which means I am informed they have no ſmutt, which is ſo much labour ſaved on a large wheat farm. But it is to be obſerved in this caſe, that their lands are in high cultivation.

I find in this, as well as in many other counties, different opinions prevail in regard to the making of butter, both as to quantity and quality. As to the firſt, I would not heſitate to ſay, that churning the milk is the moſt productive; my opinion being ſupported by the practice of thoſe who are reckoned the moſt thrifty money-making houſe-wives here, by whom the plunge-churn is the one moſt generally uſed. There is not a doubt that if made from the cream only, the butter will be conſiderably richer, and the taſte and flavour higher, provided due attention be paid to keeping the veſſels clean, and proper care be taken to churn it when in the beſt ſtate, which is well known by every attentive houſe-wife and dairy-maid. This kind will ſeldom admit of being ſalted, turning ſoon rancid, perhaps owing to its richneſs reſiſting the ſalt; whereas the other, made from the milk, being poorer and more porous, takes in a ſufficient quantity of ſalt to make it keep longer ſweet.

A farmer ſociety was inſtituted ſome years ago in the eaſt end of this ſhire, for the proſecution of thieves, *&c.* It has a fund of from L. 100 to L. 200, raiſed by aſſeſſment, at the rate of 6 d. each member yearly, the ſeveral members managing the funds and buſineſs by regular rotation. It is much to be wiſhed that this Society were formed into one ſimilar to that at Dalkeith in Mid Lothian, for the purpoſes of diſcuſſion and improvements in agriculture. If eſtabliſhed upon a proper plan, with due regulations, it might be productive of very beneficial conſequences; and if a certain number of the members were yearly elected to take the trouble to ſettle all differences by way of arbitration, it would prevent much litigation and expenſe, and be a more

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ſpeedy way of obtaining juſtice than the tedious rounds of law at preſent in practice.

With reſpect to experiments on *Sheep*, in the years 1792 and 1793, I have tried upon a ſmall ſcale to croſs the very worſt woolled black-faced Scotch ewe, with the Herefordſhire ram, and have found the experiment turn out to a wiſh; the animal better ſhaped, although not much heavier, and the wool more than double in value. I have often thought, that if the Society for promoting Britiſh wool could lend a few rams at the proper ſeaſon to the farmers in the breeding counties, where even among any of them a ſpirit for improvement prevails, it would ſoon bring the experiment to a concluſion; and, if found to anſwer, would be a means of making the improvement more general. At the ſame time, I would recommend having the rams either ſafely returned, or fed on good paſtures after the ſeaſon is over, otherwiſe they will not thrive.

Beſides the ſpecies of *Graſs* already mentioned from Sweden, I am trying another kind from the iſland of Inchcolm, in the frith of Forth. It is tall and ſlender, ſprings as early as rye-graſs, grows higher, and conſequently affords a heavy crop of hay. Horſes eat it readily, either green or in hay; it reſembles that ſpecies called oat-graſs in England; but having a ſmall quantity only laſt year of it, I am not able to ſay yet how it will turn out.

I have in theſe three laſt years tried to raiſe carrot, cabbage, mangel-wurzel, or root of ſcarcity, giving each an equal chance in point of cultivation, all upon a ſmall ſcale. I had moſt weight from the root of ſcarcity; next, from cabbage. Although there was at the rate of 6 lb. the ſquare yard more weight of mangel-wurzel than of cabbage, and the cattle ate it readily, I never found that they were ſo much bettered by it as either by cabbage or carrots, both

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which have a viſible effect of ſoon mending the cattle. I have of courſe totally given it up as a bad kind of food. Cabbage always will be propagated and eſteemed. Carrot, although not ill to raiſe, I find ſubject in certain ſeaſons to be almoſt totally cut off, after they are conſiderably advanced, by a ſpecies of worms that prey upon them in thouſands below ground. Nothing gives horſes a finer coat or ſkin than this root. Parſnips ought to be tried; perhaps they will make a horſe thrive as well, without being liable to the ſame kind of vermin as carrot.

Pigeons are no doubt a great deſtruction to grain in the filling ſeaſon, as well as when in the ſhock, both for wheat, barley, and peaſe. If the proprietors of pigeons were to feed them regularly twice a day from the end of July till the time the wheat and barley are moſtly got in, they would be little felt as a nuiſance. It would, I am ſure, ſave a vaſt number of their lives, both old and young.

Another obſtacle to our crops is a ſmall ſpecies of the Grub-worm, in lands that have been for any conſiderable time in old graſs, when ploughed up again for oats; eſpecially if the lands be over-run with moſs, or what is here called fog, and the ſoil tolerably dry. Sometimes the firſt crop from ley ſuffers, but eſpecially the ſecond, and even the third, if no ſummer fallow intervene. They generally begin their depredations in the months of May and June, if the plants be ſtinted at that time, which is commonly the caſe, by the dry eaſt winds then prevalent. Several acres may be ſeen in an ordinary ſized field totally eaten up by them, cutting and preying upon the roots of the oats; ſometimes wheat, and even barley, I have ſeen cut off by them, although leſs frequently. There has been found no cure here for this complaint. Neither liming plentifully, nor the application of the roller, has any effect. If the black crow or rook could come at them, this would bid faireſt for diminiſhing

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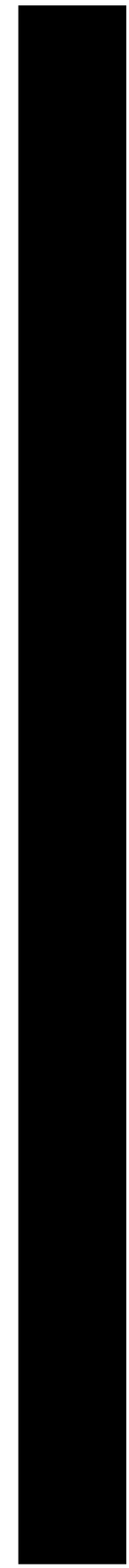
niſhing their numbers, as it ſwallows them with avidity, even in preference to grain.

We have a ſhare of moſt of the kinds of weeds common in Scotland. The ſmall thiſtle, the ſkeldrick, or different ſpecies of wild muſtard, with the couch graſs, are the moſt troubleſome, but are yearly loſing ground by the frequent ſummer fallowings and drill crops, that are obtaining among us.

Coal is chiefly uſed here as fuel, of which there have been great quantities put out at Borrowſtounneſs for many years paſt, which have been long eſteemed of the beſt quality of any along either ſide of the Forth. They are raiſed one-third in price above what they were 15 years ago. They ſell at preſent for 8 s. 6 d. the ton weight, the beſt kind.



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